APPENDIX D

Mine Maps

As required under R645-302-525-270

* **CONTENTS**

This information is considered "Confidential". A separate CD is provided for DOGM records.

No maps were received with original submittal. July 8, 2008 except two (2) Raptor Maps were received. JMC/ge McCourt has one Raptor map other in PIC
*(CD that was received was blank.)

☐ Confidential
☒ Shelf
☐ Expandable
Refer to Record No 0040 Date 07082008
In C/015018, 2008, Incoming
For additional information Confidential

APPENDIX E

Other Information

In accordance with the requirements of R645-301 and R645-302

CONTENTS

2007 Raptor Report – This report is considered "Confidential" and is not included here. A separated CD is included for DOGM records.

Subsidence Report (See Accompanying Volume)

Hydrology Report (See Accompanying Volume)

PacifiCorp
Energy West Mining Company
Trail Mountain Mine
Division of Oil, Gas, and Mining Permit Number:
C/015/0009
2007 Annual Report

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an x.*

GENERAL INFORMATION

Permittee Name	PacifiCorp
Mine Name	Trail Mountain Mine
Operator Name (If other then permittee)	Energy West Mining Company
Permit Expiration Date	February 21, 2010
Permit Number	C/015/0009
Authorized Representative Title	Geological and Environmental Affairs Manager
Phone Number	(435) 687-4712
Fax Number	(435) 687-2695
E-mail Address	Ken.fleck@pacificorp.com
Mailing Address	P.O. Box 310 Huntington, Utah 84528
Designated Representative	Ken Fleck
Resident Agent	Ken Fleck
Resident Agent Mailing Address	Same as above
Number of Binders Submitted	2

IDENTIFICATION OF OTHER PERMITS

Identify other permits that are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expiration Date
MSHA Mine ID(s)	42-01211	Trail Mountain Mine	None
MSHA Impoundment(s)	None		
NPDES/UPDES Permit(s)	UT0023728	Site 001, Sediment Pond	December 31, 2012
		Site 002, Mine Discharge	
PSD Permit(s) (Air)	DAQE-694-95	Issued 8/9/95, includes Cottonwood/Wilberg Mine.	None
Other			

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and under the approved plan that must be periodically submitted to the Division. Specify whether the information is included as Appendix A to this report or currently on file with the Division.

Certified Reports:	Required Yes	Required No	Included or Included	DOGM file location Vol, Chapter, Page	Comments
Excess Spoil Piles	☐	☒	☐		
Refuse Piles	☒	☐	☒		DOGM receives these reports quarterly. Refer to Appendix A
Impoundments	☒	☐	☒		DOGM receives these reports quarterly. Refer to Appendix A
Other					
	☐	☐	☐		
	☐	☐	☐		

COMMITMENTS AND CONDITIONS

The Permittee is responsible for ensuring annual technical commitments in the MRP and conditions accepted with the permit are completed throughout the year.

REPORTING OF OTHER TECHNICAL DATA

List other technical data and information as required under the approved plan, which must be periodically submitted to the Division. Specify whether the information is included as Appendix B to this report or currently on file with the Division.

-The annual Vegetation Monitoring Report is included in Appendix B-

*Reminder: If equipment has been abandoned during 2007, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there were any hazardous or toxic materials and any revision to the PHC as necessary.

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Change in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is Requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the annual report. Please provide the Department of Commerce, Annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other change as necessary regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include certified financial statements, audits or worksheets, which may be required to meet bonding requirements. Specify whether the information is currently on file with the Division or included as Appendix C to the report.

Legal / Financial Update	Required Yes	Required No	Included or DOGM File location Included	Included or DOGM File location Vol, Chapter, Page	Comments
Department of Commerce, Annual Report Officers	☐	☒	☒	☒Legal/Financial Volume	Amendment pending approval. See Appendix C
Other					

MINE MAPS

Copies of mine maps, current and up-to-date through at least December 31, 2007, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.240. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential. Please provide a CD.

Map Number(s)	Map Title/ Description	Confidential Yes	Confidential No
Mine Workings Map	See previous annual reports (mine is in temporary cessation)	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

OTHER INFORMATION

Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.

Additional attachment to this report? **Yes** ☒ **No** ☐

Annual Raptor Survey Report (Confidential Report, submitted separately)
Subsidence Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)
Hydrology Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)

APPENDIX A

Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

As required under R645-301-514

CONTENTS

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/009	**Report Date**	MARCH 30, 2007
Mine Name	Trail Mountain Mine		
Company Name	Energy West Mining Company		
Impoundment Identification	**Impoundment Name**	**Trail Mountain Mine Pond:**	
	Impoundment Number		
	UPDES Permit Number	UT-G04003-001	
	MSHA ID Number	N/A	

IMPOUNDMENT INSPECTION

Inspection Date	MARCH 30, 2007
Inspected By	John Christensen / Rick Cullum
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	1ST Quarter 2007 Inspection

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

60% Design Storage Capacity 0.282 A.F. at 7182

100% Sediment Capacity 0.47 A.F. at 7183.6

3. Principle and emergency spillway elevations.

Principle Spillway Elevation (F.A.S.L.): 7186.6

Emergency Spillway Elevation: (F.A.S.L.): 7194.6

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/009	**Report Date**	JUNE 26, 2007
Mine Name	Trail Mountain Mine		
Company Name	Energy West Mining Company		
Impoundment Identification	**Impoundment Name**	**Trail Mountain Mine Pond:**	
	Impoundment Number		
	UPDES Permit Number	UT-G04003-001	
	MSHA ID Number	N/A	

IMPOUNDMENT INSPECTION

Inspection Date	JUNE 18, 2007
Inspected By	John Christensen / Rick Cullum
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	2ND Quarter 2007 Inspection

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

60% Design Storage Capacity 0.282 A.F. at 7182

100% Sediment Capacity 0.47 A.F. at 7183.6

3. Principle and emergency spillway elevations.

Principle Spillway Elevation (F.A.S.L.): 7186.6

Emergency Spillway Elevation: (F.A.S.L.): 7194.6

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2

4. Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

Water Elevation	7181.16
Discharging	No
Inlet, Outlet Conditions	Good
Slope conditions	Good

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

5. Field Evaluation. Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

Sediment Volume	0.16 A.F.
Remaining Sediment Storage Capacity	0.122 A.F.
Water Impounded	0.04 A.F.
Changes, comments, etc.	Mining has seized at Trail Mtn. operations, only storm run off will run into the pond. The pond was cleaned in 4th Quarter 2005.

Qualification Statement

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 7/20/07

Signature: Richard Cullimore **Date:** 7-23-07

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/009	**Report Date**	Sept. 26, 2007
Mine Name	Trail Mountain Mine		
Company Name	Energy West Mining Company		
Impoundment Identification	**Impoundment Name**	**Trail Mountain Mine Pond:**	
	Impoundment Number		
	UPDES Permit Number	UT-G04003-001	
	MSHA ID Number	N/A	

IMPOUNDMENT INSPECTION

Inspection Date	Sept. 10, 2007
Inspected By	John Christensen / Rick Cullum
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	3rd Quarter 2007 Inspection

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

60% Design Storage Capacity 0.282 A.F. at 7182

100% Sediment Capacity 0.47 A.F. at 7183.6

3. Principle and emergency spillway elevations.

Principle Spillway Elevation (F.A.S.L.): 7186.6

Emergency Spillway Elevation: (F.A.S.L.): 7194.6

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2

4. Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

Water Elevation	7184.59
Discharging	No
Inlet, Outlet Conditions	Good
Slope conditions	Good

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

5. Field Evaluation. Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

Sediment Volume	0.16 A.F.
Remaining Sediment Storage Capacity	0.122 A.F.
Water Impounded	0.33 A.F.
Changes, comments, etc.	Mining has seized at Trail Mtn. operations, only storm run off will run into the pond. The pond was cleaned in 4th Quarter 2005.

Qualification Statement

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 10/31/07

Signature: Richard Cullum **Date:** 10-31-07

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/009	**Report Date**	Dec. 21, 2007
Mine Name	Trail Mountain Mine		
Company Name	Energy West Mining Company		
Impoundment Identification	**Impoundment Name**	**Trail Mountain Mine Pond:**	
	Impoundment Number		
	UPDES Permit Number	UT-G04003-001	
	MSHA ID Number	N/A	

IMPOUNDMENT INSPECTION

Inspection Date	Dec. 10, 2007
Inspected By	John Christensen / Rick Cullum
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	4th Quarter 2007 Inspection

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

No unstable or structural weaknesses found.

Required for an impoundment which functions as a SEDIMENTATION POND.

2. **Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.**

60% Design Storage Capacity 0.282 A.F. at 7182

100% Sediment Capacity 0.47 A.F. at 7183.6

3. **Principle and emergency spillway elevations.**

Principle Spillway Elevation (F.A.S.L.): 7186.6

Emergency Spillway Elevation: (F.A.S.L.): 7194.6

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2

4. Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

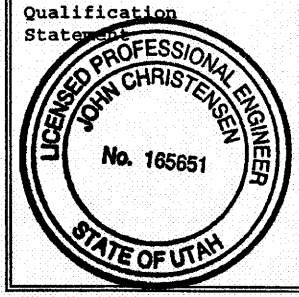
Water Elevation	7182.84 (Pond was frozen at the time of inspection)
Discharging	No
Inlet, Outlet Conditions	Good
Slope conditions	Good

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

5. Field Evaluation. Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

Sediment Volume	0.16 A.F.
Remaining Sediment Storage Capacity	0.122 A.F.
Water Impounded	0.18 A.F.
Changes, comments, etc.	Mining has seized at Trail Mtn. operations, only storm run off will run into the pond. The pond was cleaned in 4th Quarter 2005.

Qualification Statement

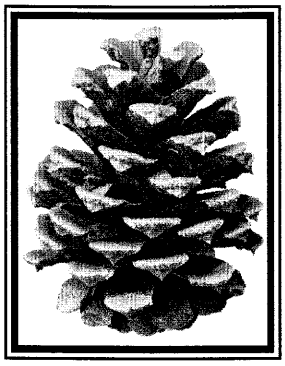


I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 1/10/08

Signature: Richard Cullimore **Date:**

TRAIL MOUNTAIN MINE SITE



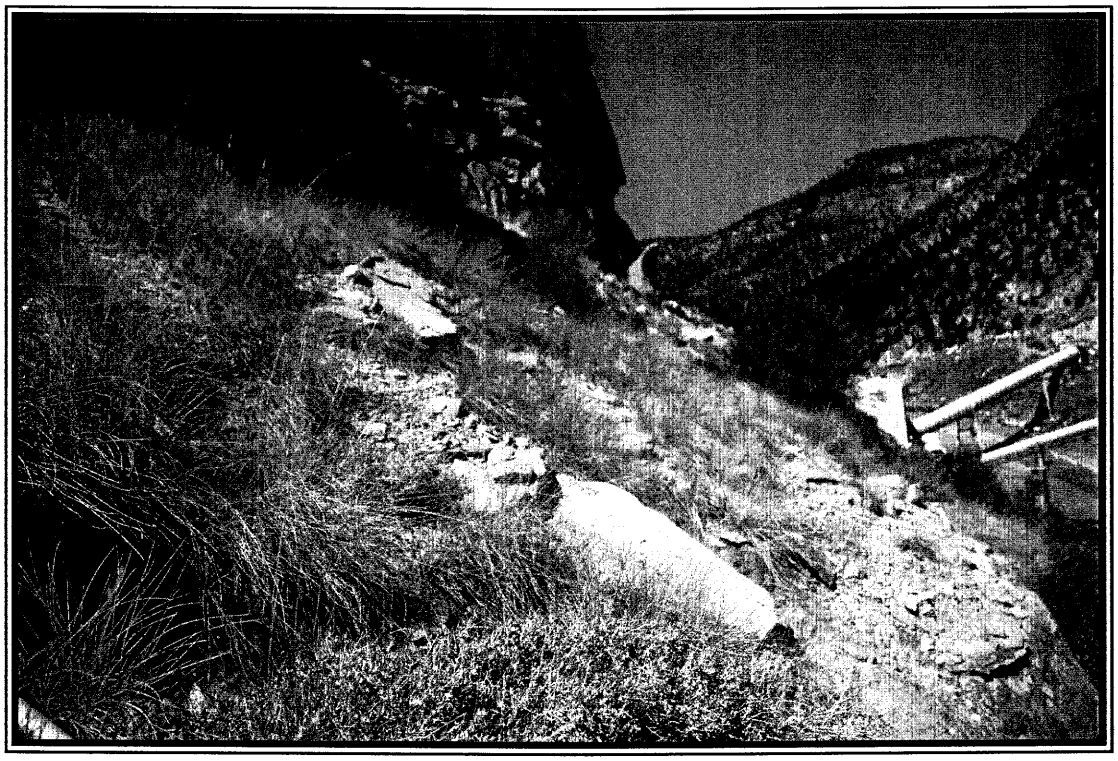
Trail Mountain Reference Area

Table 33: Cover and frequency by plant species at the Trail Mountain Mine site.

TRAIL MTN. REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Amelanchier utahensis	2.50	7.16	15.00
Atriplex confertifolia	2.25	7.82	10.00
Chrysothamnus nauseosus	2.25	4.87	20.00
Ephedra viridis	0.75	3.27	15.00
Eriogonum corymbosum	1.00	4.36	50.00
FORBS			
Machaeranthera grindelioides	0.25	1.09	5.00
Stanleya pinnata	0.25	1.09	5.00
GRASSES			
Elymus salinus	20.50	12.44	85.00

Table 34: Total cover and composition at the at the Trail Mountain Mine site.

TRAIL MTN. REFERENCE AREA		
COVER	MEAN	STD. DEV.
Total Living Cover	29.75	8.14
Litter	9.25	4.26
Bareground	11.00	6.04
Rock	50.00	12.65
% COMPOSITION		
Shrubs	30.23	35.01
Forbs	1.71	5.22
Grasses	68.06	33.90



Trail Mountain Reference Area

COTTONWOOD FAN PORTAL AREA

Pinyon-Juniper Reference Area

Table 35: Cover and frequency by plant species at the Cottonwood Fan Portal area.

PINYON-JUNIPER REFERENCE AREA

	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
Pinus edulis	4.08	9.81	16.67
UNDERSTORY			
SHRUBS			
Amelanchier utahensis	0.50	2.69	5.00
Atriplex confertifolia	1.08	4.19	6.67
Chrysothamnus nauseosus	2.17	7.55	10.00
Ephedra viridis	1.58	5.51	10.00
Juniperus osteosperma	1.58	5.51	8.33
Mahonia repens	1.30	4.85	10.00
Pinus edulis	2.00	5.10	16.67
FORBS			
Cryptantha sp.	0.58	1.61	11.67
Descurainia pinnata	0.25	1.09	5.00
Stanleya pinnata	0.62	2.33	8.33
GRASSES			
Elymus salinus	16.25	12.06	53.33
Stipa hymenoides	1.67	4.35	13.33

Table 36: Total cover and composition at the Cottonwood Fan Portal area.

PINYON-JUNIPER REFERENCE AREA

A. COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	4.08	9.81
Understory Living Cover (u)	29.58	8.48
Litter	22.33	12.50
Bareground	14.75	8.96
Rock	33.33	12.67
o + u	33.67	8.84
B. % COMPOSITION		
Shrubs	34.26	37.90
Forbs	5.37	11.25
Grasses	60.37	35.89

Cottonwood Fan Portal Area: Pinyon-Juniper Reference Area

PacifiCorp
Energy West Mining Company
Des Bee Dove Mine
Division of Oil, Gas, and Mining Permit Number:
C/015/0018-07
2007 Annual Report

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

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GENERAL INFORMATION

Permittee Name	PacifiCorp
Mine Name	Des Bee Dove Mines
Operator Name (If other then permittee)	Energy West Mining Company
Permit Expiration Date	August 30, 2010
Permit Number	C/015/0017
Authorized Representative Title	Geological and Environmental Affairs Manager
Phone Number	(435) 687-4712
Fax Number	(435) 687-2695
E-mail Address	Ken.fleck@pacificorp.com
Mailing Address	P.O. Box 310 Huntington, Utah 84528
Designated Representative	Ken Fleck
Resident Agent	Ken Fleck
Resident Agent Mailing Address	Same as above
Number of Binders Submitted	2

IDENTIFICATION OF OTHER PERMITS

Identify other permits that are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expiration Date
MSHA Mine ID(s)	N/A	Record abandoned by MSHA March 27, 1987	
MSHA Impoundment(s)	None		
NPDES/UPDES Permit(s)	UTG040022	Site 001, Sediment Pond site reclaimed January 31, 2006.	April 30, 2013
PSD Permit(s) (Air)	None		
Other			

CERTIFIED REPORTS

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Certified Reports:	Required		Included or DOGM file location		Comments
	Yes	No	Included	Vol, Chapter, Page	
Excess Spoil Piles	☐	☐	☐		
Refuse Piles	☒	☐	☒		DOGM receives these reports quarterly. Refer to Appendix A
Impoundments	☐	☐	☐		Reclaimed January 2006
Other					
	☐	☐	☐		
	☐	☐	☐		

COMMITMENTS AND CONDITIONS

The Permittee is responsible for ensuring annual technical commitments in the MRP and conditions accepted with the permit are completed throughout the year.

REPORTING OF OTHER TECHNICAL DATA

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Change in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is Requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the annual report. Please provide the Department of Commerce, Annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other change as necessary regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include certified financial statements, audits or worksheets, which may be required to meet bonding requirements. Specify whether the information is currently on file with the Division or included as Appendix C to the report.

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	Yes	No	Included	Vol, Chapter, Page	
Department of Commerce, Annual Report Officers	☐	☒	☒	☒Legal/Financial Volume	Amendment pending approval. See Appendix C

Other					
	☐	☐	☐	☐	

MINE MAPS

Copies of mine maps, current and up-to-date through at least December 31, 2007, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.240. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential. Please provide a CD.

Map Number(s)	Map Title/ Description	Confidential Yes	Confidential No
Mine Workings Map	See previous annual reports (mine is reclaimed)	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

OTHER INFORMATION

Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.

Additional attachment to this report? **Yes** ☒ **No** ☐

Annual Raptor Survey Report (Confidential Report, submitted separately)
Subsidence Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)
Hydrology Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)

REVEGETATION MONITORING
DES-BEE-DOVE MINE SITE

YEAR FOUR
2007

The Des-Bee-Dove Reclaimed Mine Site

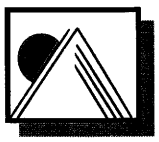
Prepared by

MT. NEBO SCIENTIFIC, INC.
330 East 400 South, Suite 6
P.O. Box 337
Springville, Utah 84663
(801) 489-6937

Patrick D. Collins, Ph.D.

for

ENERGY WEST MINING COMPANY
P.O. Box 310
Huntington, Utah 84528



March 2008

TABLE OF CONTENTS

REVEGETATION MONITORING
DES-BEE-DOVE MINE SITE
2007

INTRODUCTION

Purpose of Study

The Des-Bee-Dove mine site is an area with a coal mining history. The disturbed areas of the mine site have been reclaimed. Vegetation is becoming established on the reclaimed areas. The purpose of this study is to provide revegetation monitoring for **Year 4** of the *10-Year Responsibility Period*, or the period of time required following final revegetation of all reclaimed coal mines before mine operators may apply for *Phase III* or *Final Bond Release* through State of Utah, Division of Oil, Gas & Mining (DOGM) . In order to achieve approval for Phase III Bond Release, vegetation of the reclaimed site must meet specific standards for revegetation success.

Brief Mine Site History

State of Utah on-line information provides a brief history of the Des-Dee-Dove Mine site. Their description follows below:

> *The Des-Bee-Dove Mine complex (the Deseret, Beehive and Little Dove Mines) was acquired by Utah Power and Light in 1972 from Deseret Coal Company, an LDS Church enterprise. Two coal seams, the Hiawatha and Blind Canyon, were mined using the room and pillar method. The LDS Church and the Castle Valley Fuel Company mined the property from 1938 to 1947. Prior to this, from 1936 to 1938, the mine workings were operated by two men, Edward and Broderick. Mining first occurred in the canyon in 1898 when the Griffith Mine was started.*
>
> *The Des-Bee-Dove mines were operated by Utah Power and Light Company until 1989 when the*

merging between PacifiCorp and UP&L took place. In 1990, Energy West Mining Company, a wholly owned subsidiary of PacifiCorp replaced the UP&L Mining Division as operator of its mines: Cottonwood/Wilberg, Deer Creek, Des-Bee-Dove, and Trail Mountain. The Des-Bee-Dove Mine permit area encompassed over 2,800 acres, a combination of fee land, and state and federal leases. Leases have been relinquished and the permit area has been reduced to 154 acres. The mine complex has been in temporary cessation since 1987 and was reclaimed in 2003.

Site Description

The Des-Bee-Dove mine site is located approximately 10 miles northwest of the town of Castle Dale, Utah. Elevation of the study sites ranged between 7,200 ft and 8,000 ft above sea level. Slopes of the study area were variable, but were often relatively steep and had various exposures to the sun.

Prior to disturbance by mining, the native vegetation was most likely dominated by pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osterosperma*), with Salina wildrye (*Elymus salinus*) as the dominant understory species.

METHODS

Quadrat Placement

Sample quadrats for quantitative sampling the vegetation were randomly placed throughout the reclaimed areas to adequately represent each site as a whole.

Cover, Frequency & Composition

Cover estimates were made using ocular methods with meter square quadrats. Species composition and relative frequencies were also assessed from the quadrats. Additional information recorded on the raw data sheets were: estimated precipitation, slope, exposure, grazing use, animal disturbance and other appropriate notes. Plant nomenclature follows "A Utah Flora" (Welsh et al. 2003).

Sample Size & Adequacy

Sampling adequacy was calculated using formula given below.

$$nMIN = \frac{t^2 s^2}{(dx)^2}$$

where,

nMIN	= minimum adequate sample
t	= appropriate confidence t-value
s	= standard deviation
x	= sample mean
d	= desired change from mean

However, sample size was also based on the size of each subdivision within the reclaimed areas resulting in more samples taken in larger areas.

Vegetation Sample Area Map

The locations of the general base map was prepared by Energy West Mining Company. A Vegetation Sample Area Map using this base map has been included in this report.

Photographs

Representative color photographs were taken of the sample areas and have been included in this report.

RESULTS

Reclaimed Areas

The reclaimed Des-Bee-Dove mine site was subdivided into separate areas (Table 1). These areas were sampled and reported independently to allow closer scrutiny of individual sites. The sample areas are shown on the vegetation sample area map and color photographs later in this report.

Table 1: Sample areas, acreage and sample sizes of the reclaimed Des-Bee-Dove mine site.

Sample Area	Acres	Cover (n)	Density (n)
Access Trail	3.5	10	10
East Slope	5.0	50	50
Bathhouse Slope	7.6	75	75
Deseret Mine Area	2.7	25	25
Switchbacks	1.1	10	10
Substation Area	0.4	5	5
Beehive/Little Dove Mine Area	2.1	20	20
Pinyon-Juniper Reference Area	1.0	20	20
TOTALS	**23.4**	**215**	**215**

Reference Area

A pinyon-juniper reference area previously chosen to represent revegetation success standards was also sampled in 2007 to make preliminary Year 4 data comparisons with the reclaimed areas.

Summarized Data Tables

Results of quantitatively sampling the reclaimed areas at the Des-Bee-Dove mine site have been provided in summary tables of this report. To facilitate access to the summarized cover, composition and density data for each sample area in this report refer to Table 2. The data summaries are shown on Table 3 *through* Table 26. A list of the common plant names found in the summary tables is shown on Table 27.

Table 2: Data Locator.

SAMPLE AREA	Cover by Species	Total Cover	Compos-ition	Woody Species Density
Access Trail	Table 3	Table 4 (A)	Table 4 (B)	Table 5
East Slope	Table 6	Table 7 (A)	Table 7 (B)	Table 8
Bathhouse Slope	Table 9	Table 10 (A)	Table 10 (B)	Table 11
Deseret Mine Area	Table 12	Table 13 (A)	Table 13 (B)	Table 14
Switchbacks	Table 15	Table 16 (A)	Table 16 (B)	Table 17
Substation Area	Table 18	Table 19 (A)	Table 19 (B)	Table 20
Beehive/Little Dove Mine Area	Table 21	Table 22 (A)	Table 22 (B)	Table 23
P-J Reference Area	Table 24	Table 25 (A)	Table 25 (B)	Table 26

SUMMARY & CONCLUSIONS

The **total living cover** of the pinyon-juniper reference area was estimated at nearly 30 percent. As one can easily observe from Figure 1, most of the reclaimed areas have met or exceeded the total living cover of the reference area standard. The only exception to this statement was the Access Trail, but it approached the cover of the reference area with a value of nearly 26 percent. The highest total living cover for all study areas was the Substation Area with a value of 44 percent.

Also notable from the summary tables is that most all species present in the sample

quadrats were "desirable" plant species as opposed to "weedy" exotics that sometimes invade disturbed lands.

Woody species density of all reclaimed areas exceeded 710 individuals per acre, or the total density of the reference area. Figure 2 provides a graphic representation of the density values for all reclaimed and reference areas. Most of the woody species present in the density measurements were those that were seeded or planted during revegetation procedures. The highest density value was on the Bathhouse Slope which had a total density of 2,936 individuals per acre.

MacArthur's Index that represent a **diversity** index for all sample areas suggested that the reclaimed areas had greater diversity than that of the reference area (Figure 3). The highest diversity value was the Bathhouse Slope.

In conclusion, Year 4 quantitative sampling suggests that revegetation of the Dee-Bee-Dove mine site is progressing well for total living cover, woody species density and diversity when compared to the Pinyon-Juniper Reference Area – the area chosen to be used for revegetation success standards.

DATA SUMMARY TABLES

Following are the summarized data for all sample areas. As mentioned, Figures 1 through 3 have also been prepared for specific parameters in these tables and have been included later in this report.

Access Trail

Table 3: Cover and frequency by plant species at the Des-Bee-Dove mine site.

ACCESS TRAIL	MEAN	STD. DEV.	FREQUENCY
TREES & SHRUBS			
Atriplex canescens	5.50	12.34	20.00
Atriplex confertifolia	4.00	6.24	30.00
Atriplex gardneri	0.50	1.50	10.00
Ceratoides lanata	0.50	1.50	10.00
Chrysothamnus nauseosus	0.70	2.10	10.00
FORBS			
Malcomia africana	0.50	1.50	10.00
Penstemon palmeri	2.90	3.45	50.00
GRASSES			
Elymus lanceolatus			40.00
Elymus salinus	1.30	3.03	20.00
Elymus smithii	1.60	2.69	30.00
Elymus spicatus	5.50	8.20	40.00

Table 4: Total cover and composition at the Des-Bee-Dove mine site.

ACCESS TRAIL A. COVER	MEAN	STD. DEV.
Total Living Cover	25.50	16.35
Litter	7.50	3.35
Bareground	29.00	12.61
Rock	38.00	13.45
B. % COMPOSITION		
Shrubs	35.82	29.83
Forbs	15.67	21.24
Grasses	48.51	30.68

Table 5: Woody species density at the Des-Bee-Dove mine site.

ACCESS TRAIL	No/Ac
Atriplex canescens	799.92
Atriplex confertifolia	611.70
Cercocarpus ledifolius	47.05
Chrysothamnus nauseosus	329.38
Ephedra viridis	94.11
TOTAL	**1882.16**

East Slope

Table 6: Cover and frequency by plant species at the Des-Bee-Dove mine site.

EAST SLOPE	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Atriplex canescens	9.74	11.62	56.00
Atriplex confertifolia	1.90	3.86	22.00
Cercocarpus ledifolius	0.24	1.19	4.00
Chrysothamnus nauseosus	1.20	3.05	14.00
Eriogonum corymbosum	0.40	2.20	4.00
Juniperus osteosperma	0.10	0.70	2.00
FORBS			
Penstemon palmeri	2.80	5.49	28.00
Malcomia africana	1.00	4.00	8.00
Salsola tragus	0.20	1.40	2.00
GRASSES			
Elymus cinereus	1.10	4.39	6.00
Elymus junceus	2.00	7.28	10.00
Elymus lanceolatus	2.10	4.91	20.00
Elymus smithii	3.16	7.44	22.00
Elymus spicatus	3.10	6.24	22.00
Stipa hymenoides	3.50	5.41	34.00

Table 7: Total cover and composition at the Des-Bee-Dove mine site.

EAST SLOPE **A. COVER**	MEAN	STD. DEV.
Total Living Cover	32.54	14.60
Litter	7.96	3.68
Bareground	28.90	15.24
Rock	30.60	15.29
B. % COMPOSITION		
Shrubs	41.07	31.75
Forbs	16.76	26.52
Grasses	42.17	33.42

Table 8: Woody species density at the Des-Bee-Dove mine site.

EAST SLOPE	*No/Ac*
Atriplex canescens	1075.74
Atriplex confertifolia	437.39
Atriplex gardneri	11.82
Ceratoides lanata	47.29
Chrysothamnus nauseosus	591.06
Eriogonum corymbosum	165.50
Juniperus osteosperma	35.46
TOTAL	**2364.26**

Bathhouse Slope

Table 9: Cover and frequency by plant species at the Des-Bee-Dove mine site.

BATHHOUSE SLOPE	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Atriplex canescens	4.28	9.35	26.67
Atriplex confertifolia	3.47	6.62	26.67
Cercocarpus ledifolius	0.27	1.62	2.67
Chrysothamnus nauseosus	8.42	11.16	53.33
Eriogonum corymbosum	0.14	1.15	1.33
FORBS			
Aster abscendens	0.07	0.58	1.33
Penstemon palmeri	4.35	6.55	36.00
GRASSES			
Agropyron cristatum	0.47	3.09	2.67
Elymus cinereus	3.04	7.68	24.00
Elymus junceus	0.88	3.00	8.00
Elymus lanceolatus	2.47	4.98	22.67
Elymus salinus	0.88	2.89	9.33
Elymus smithii	2.88	5.03	30.67
Elymus spicatus	2.77	5.82	22.67
Stipa hymenoides	2.84	6.10	22.67

Table 10: Total cover and composition at the Des-Bee-Dove mine site.

BATHHOUSE SLOPE A. COVER	MEAN	STD. DEV.
Total Living Cover	37.23	14.05
Litter	10.14	5.36
Bareground	19.05	8.04
Rock	33.58	16.30
B. % COMPOSITION		
Shrubs	41.91	29.82
Forbs	11.80	18.78
Grasses	46.29	30.59

Table 11: Woody species density at the Des-Bee-Dove mine site.

BATHHOUSE SLOPE	*No/Ac*
Atriplex canescens	460.04
Atriplex confertifolia	969.01
Cercocarpus ledifolius	39.15
Chrysothamnus nauseosus	1419.26
Eriogonum corymbosum	48.94
TOTAL	**2936.40**

Deseret Mine Area

Table 12: Cover and frequency by plant species at the Des-Bee-Dove mine site.

DESERET MINE AREA	MEAN	STD. DEV.	FREQUENCY
TREES & SHRUBS			
Atriplex canescens	4.60	7.99	28.00
Atriplex confertifolia	1.60	5.24	12.00
Atriplex gardneri	1.00	4.90	4.00
Cercocarpus ledifolius	2.80	6.18	20.00
Chrysothamnus nauseosus	1.00	3.46	8.00
FORBS			
Penstemon palmeri	3.20	6.14	28.00
GRASSES			
Elymus cinereus	14.60	15.16	64.00
Elymus lanceolatus	2.40	4.72	24.00
Elymus salinus	0.40	1.96	4.00
Elymus smithii	4.00	8.37	24.00
Elymus spicatus	1.60	6.12	8.00
Stipa hymenoides	3.60	7.81	20.00

Table 13: Total cover and composition at the Des-Bee-Dove mine site.

DESERET MINE AREA		
A. COVER	MEAN	STD. DEV.
Total Living Cover	40.80	14.61
Litter	17.80	7.36
Bareground	17.20	8.49
Rock	24.20	8.57
B. % COMPOSITION		
Shrubs	28.30	27.18
Forbs	6.39	11.07
Grasses	65.31	26.33

Table 14: Woody species density at the Des-Bee-Dove mine site.

DESERET MINE AREA	*No/Ac*
Atriplex canescens	1046.40
Atriplex confertifolia	316.35
Atriplex gardneri	24.33
Ceratoides lanata	730.05
Chrysothamnus nauseosus	316.35
TOTAL	**2433.50**

Switchbacks

Table 15: Cover and frequency by plant species at the Des-Bee-Dove mine site.

SWITCHBACKS	MEAN	STD. DEV.	FREQUENCY
TREES & SHRUBS			
Atriplex canescens	10.70	12.35	50.00
Atriplex confertifolia	3.70	7.50	30.00
FORBS			
GRASSES			
Elymus cinereus	8.00	8.72	50.00
Elymus lanceolatus	4.00	6.24	30.00
Elymus salinus	1.50	4.50	10.00
Elymus smithii	3.60	4.78	40.00
Elymus spicatus	1.00	3.00	10.00
Stipa hymenoides	2.00	4.58	20.00

Table 16: Total cover and composition at the Des-Bee-Dove mine site.

SWITCHBACKS **A. COVER**	MEAN	STD. DEV.
Total Living Cover	34.50	8.20
Litter	15.00	8.66
Bareground	25.00	12.04
Rock	25.50	13.12
B. % COMPOSITION		
Shrubs	38.38	29.70
Forbs	0.00	0.00
Grasses	61.62	29.70

Table 17: Woody species density at the Des-Bee-Dove mine site.

SWITCHBACKS	No/Ac
Atriplex canescens	644.49
Atriplex confertifolia	448.34
Ceratoides lanata	28.02
TOTAL	**1120.85**

Substation Slope

Table 18: Cover and frequency by plant species at the Des-Bee-Dove mine site.

SUBSTATION SLOPE	MEAN	STD. DEV.	FREQUENCY
TREES & SHRUBS			
Atriplex canescens	5.00	5.00	40.00
Atriplex confertifolia	6.00	6.00	60.00
FORBS			
Penstemon palmeri	1.00	1.00	20.00
GRASSES			
Elymus cinereus	8.00	8.00	80.00
Elymus lanceolatus	8.00	8.00	60.00
Elymus smithii	15.00	15.00	80.00
Stipa hymenoides	1.00	1.00	20.00

Table 19: Total cover and composition at the Des-Bee-Dove mine site.

SUBSTATION SLOPE		
A. COVER	MEAN	STD. DEV.
Total Living Cover	44.00	44.00
Litter	11.00	11.00
Bareground	18.00	18.00
Rock	27.00	27.00
B. % COMPOSITION		
Shrubs	23.38	23.38
Forbs	2.22	2.22
Grasses	74.39	74.39

Table 20: Woody species density at the Des-Bee-Dove mine site.

SUBSTATION SLOPE	*No/Ac*
Atriplex canescens	474.91
Atriplex confertifolia	791.52
Chrysothamnus nauseosus	158.30
Eriogonum corymbosum	158.30
TOTAL	**1583.03**

Beehive Little Dove Mine Area

Table 21: Cover and frequency by plant species at the Des-Bee-Dove mine site.

BEEHIVE LITTLE DOVE MINE AREA	MEAN	STD. DEV.	FREQUENCY
TREES & SHRUBS			
Atriplex canescens	19.50	18.70	70.00
Atriplex confertifolia	2.25	4.02	25.00
Chrysothamnus nauseosus	0.75	3.27	5.00
FORBS			
GRASSES			
Agropyron cristatum	7.00	9.41	45.00
Elymus cinereus	3.00	9.14	10.00
Elymus lanceolatus	1.00	4.36	5.00
Elymus smithii	4.75	8.58	30.00
Stipa hymenoides	2.25	6.02	15.00

Table 22: Total cover and composition at the Des-Bee-Dove mine site.

BEEHIVE LITTLE DOVE MINE AREA		
A. COVER	MEAN	STD. DEV.
Total Living Cover	40.50	13.12
Litter	13.25	6.38
Bareground	26.00	9.95
Rock	20.25	6.22
B. % COMPOSITION		
Shrubs	50.60	33.69
Forbs	0.00	0.00
Grasses	49.40	33.69

Table 23: Woody species density at the Des-Bee-Dove mine site.

BEEHIVE LITTLE DOVE MINE AREA	*No/Ac*
Atriplex canescens	1910.97
Atriplex confertifolia	541.44
Chrysothamnus nauseosus	95.55
TOTAL	**2547.96**

Pinyon-Juniper Reference Area

Table 24: Cover and frequency by plant species at the Des-Bee-Dove mine site.

PINYON-JUNIPER REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
TREES & SHRUBS			
Cercocarpus ledifolius	0.50	2.18	5.00
Juniperus osteosperma	0.75	3.27	5.00
Pinus edulis	4.25	12.77	10.00
UNDERSTORY			
SHRUBS			
Juniperus osteosperma	3.75	9.07	25.00
Cercocarpus ledifolius	1.75	4.55	20.00
Pinus edulis	2.00	6.78	10.00
FORBS			
GRASSES			
Elymus salinus	16.75	11.65	90.00

Table 25: Total cover and composition at the at the Des-Bee-Dove mine site.

PINYON-JUNIPER REFERENCE AREA **A. COVER**	MEAN	STD. DEV.
Overstory Living Cover (o)	5.50	12.93
Understory Living Cover (u)	24.25	9.65
Litter	13.50	14.59
Bareground	15.75	9.26
Rock	46.50	13.24
o + u	29.75	11.12
B. % COMPOSITION		
Shrubs	28.12	37.17
Forbs	0.00	0.00
Grasses	71.88	37.17

Table 26: Woody species density at the Des-Bee-Dove mine site.

PJ REFERENCE AREA	*No/Ac*
Cercocarpus ledifolius	212.88
Chrysothamnus nauseosus	35.48
Ephedra viridis	195.14
Juniperus osteosperma	97.57
Pinus edulis	168.53
TOTAL	**709.61**

Plant Names

Table 27: Scientific and common plant names of species listed in the summary tables.

SCIENTIFIC NAME	COMMON NAME
Agropyron cristatum	Crested wheatgrass
Aster ascendens	Pacific aster
Atriplex canescens	Fourwing saltbush
Atriplex confertifolia	Shadscale
Atriplex gardneri	Gardner saltbush
Ceratoides lanata	Winterfat
Cercocarpus ledifolius	Curl-leaf mountain-mahogany
Chrysothamnus nauseosus	Rubber rabbitbrush
Elymus cinereus	Gt. Basin wildrye
Elymus junceus	Russian wildrye
Elymus lanceolatus	Thickspike wheatgrass
Elymus salinus	Salina wildrye
Elymus smithii	Western wheatgrass
Elymus spicatus	Bluebunch wheatgrass
Eriogonum corymbosum	Corymb buckwheat
Juniperus osteosperma	Utah juniper
Malcomia africana	African mustard
Penstemon palmeri	Palmer penstemon
Pinus edulis	Pinyon pine
Salsola tragus	Russian thistle
Stipa hymenoides	Indian ricegrass

FIG 1. LIVING COVER: RECLAIMED & REFERENCE AREAS

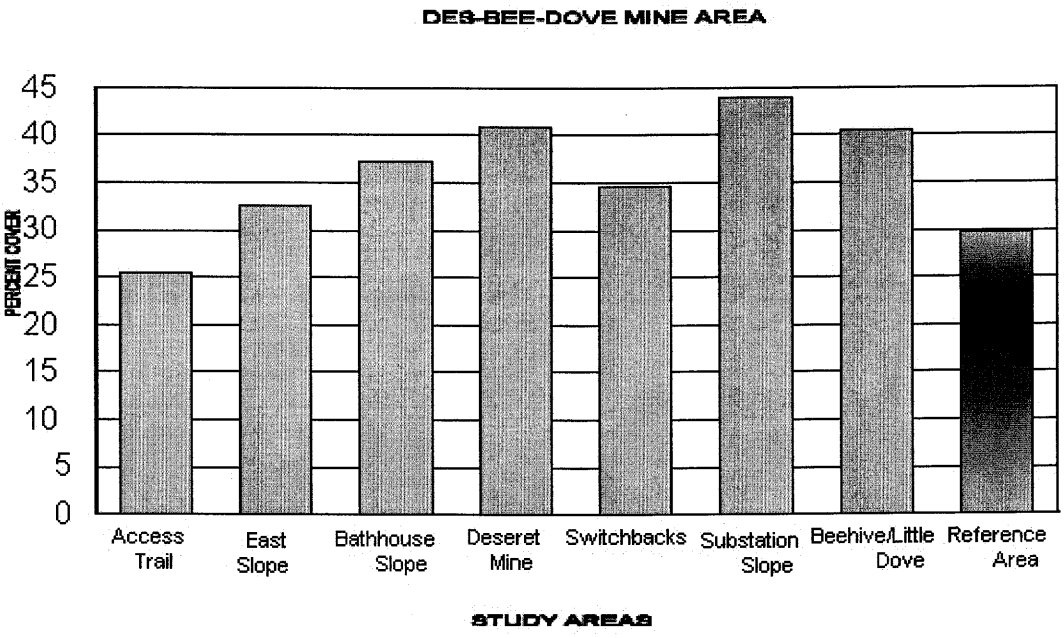


FIG 2. WOODY SPECIES DENSITY: RECLAIMED & REFERENCE AREAS

DES-BEE-DOVE MINE AREA

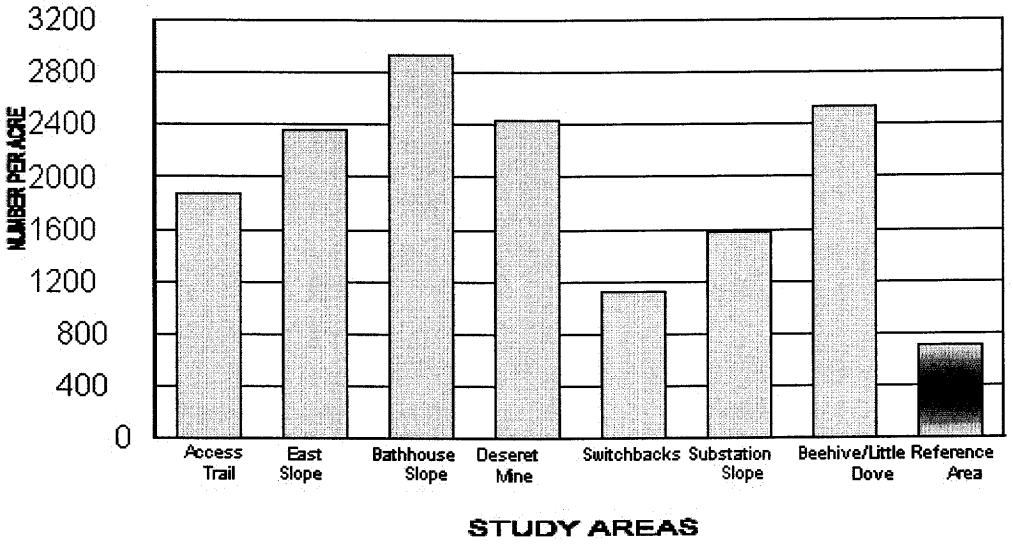
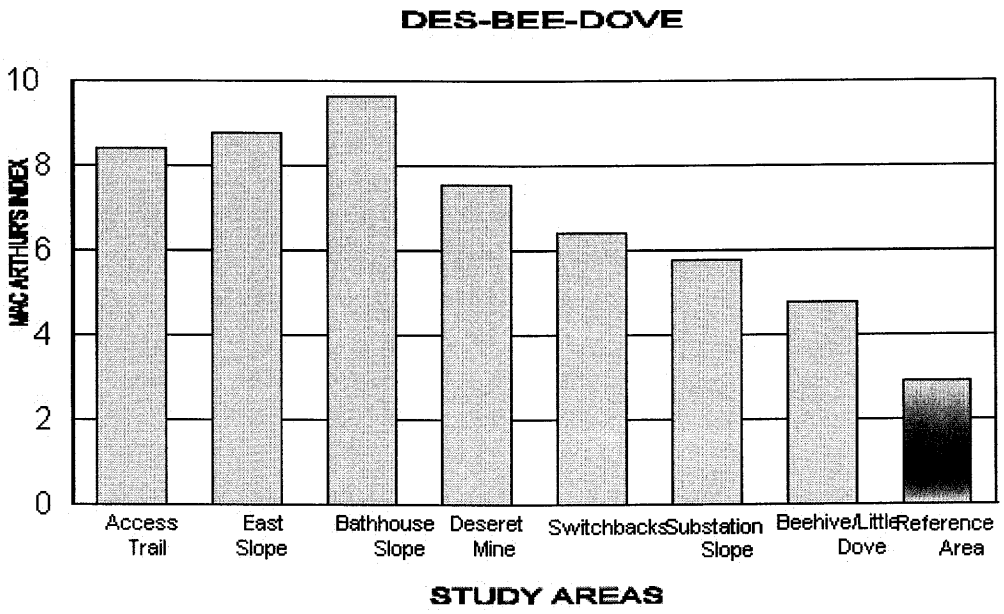


FIG 3. DIVERSITY: RECLAIMED & REFERENCE AREAS



COLOR PHOTOGRAPHS
OF THE
SAMPLE AREAS

Photo 1: Des-Bee-Dove Mine Site - Access Trail

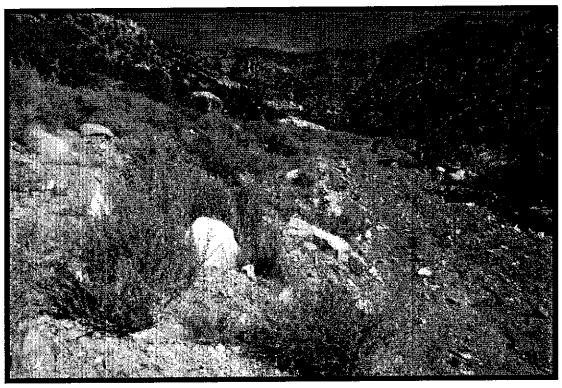


Photo 2: Des-Bee-Dove Mine Site - Access Trail

Photo 3: Des-Bee-Dove Mine Site - East Slope

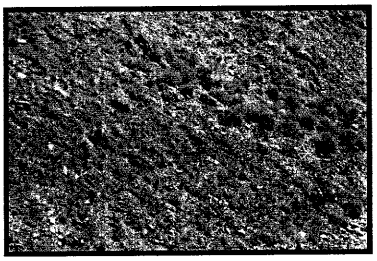


Photo 4: Des-Bee-Dove Mine Site - East Slope

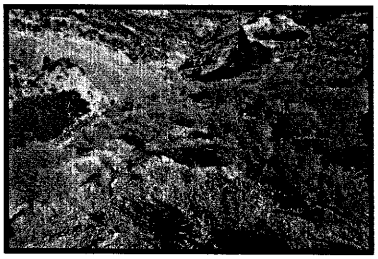


Photo 5: Des-Bee-Dove Mine Site - East Slope

Photo 6: Des-Bee-Dove Mine Site - Bathhouse Slope

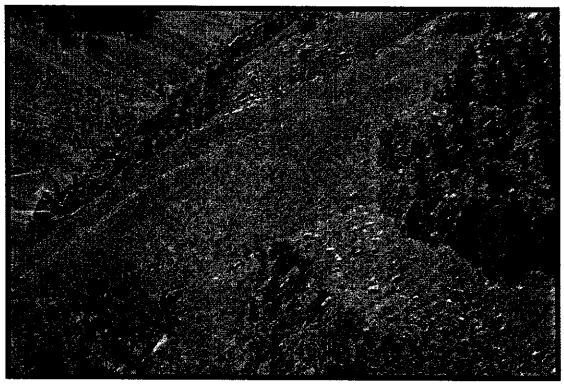


Photo 7: Des-Bee-Dove Mine Site - Bathhouse Slope

Photo 8: Des-Bee-Dove Mine Site - Bathhouse Slope

Photo 9: Des-Bee-Dove Mine Site - Deseret Mine Area

Photo 10: Des-Bee-Dove Mine Site - Switchbacks

Photo 11: Des-Bee-Dove Mine Site - Switchbacks

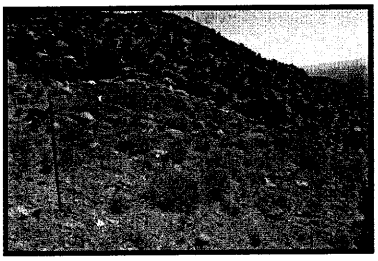


Photo 12: Des-Bee-Dove Mine Site - Substation Area

Photo 13: Des-Bee-Dove Mine Site - Beehive-Little Dove Area

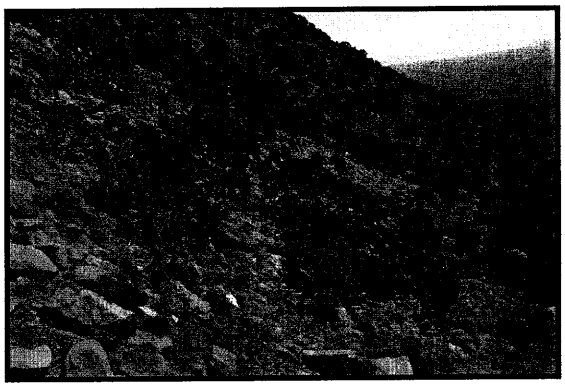
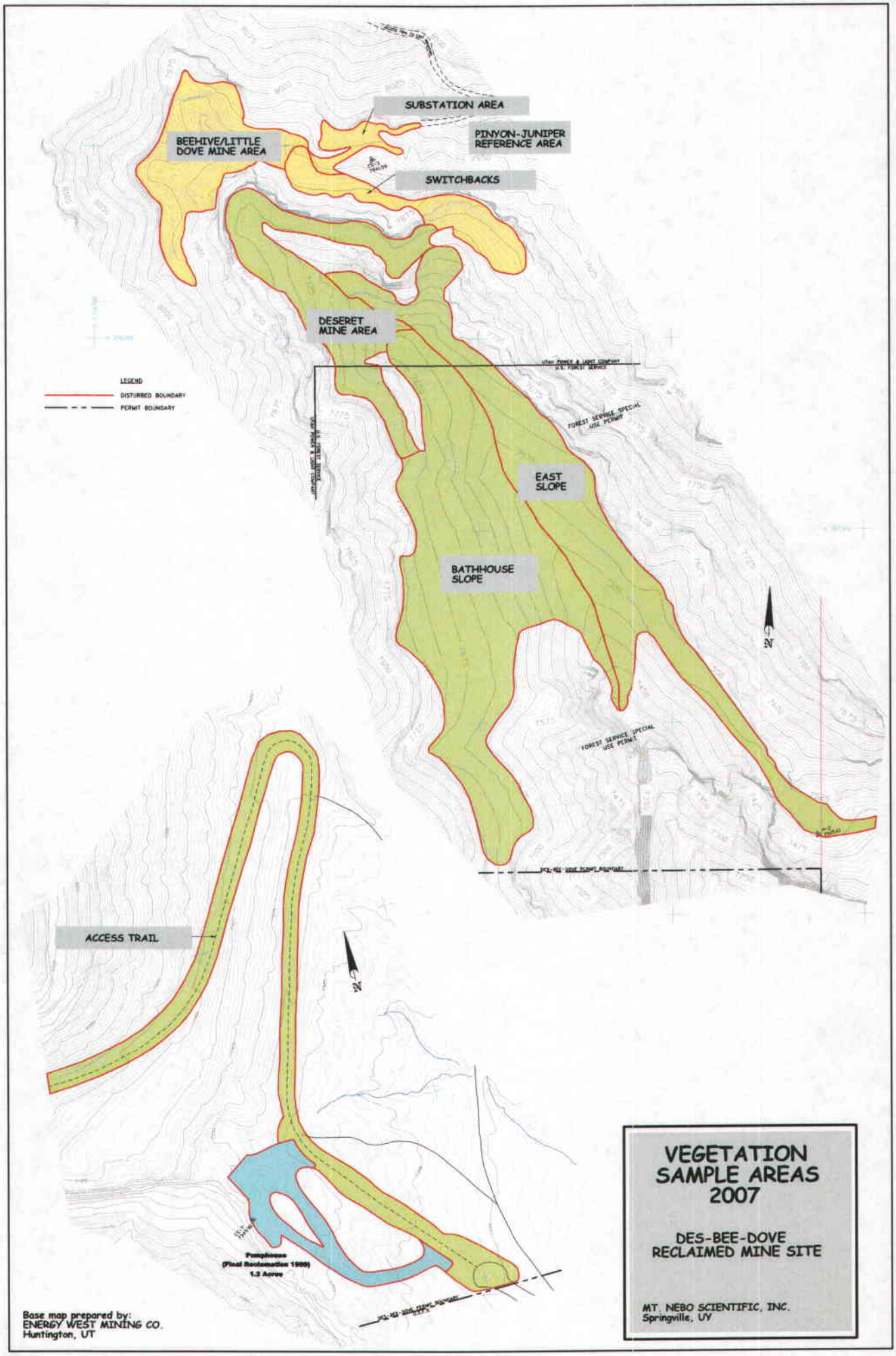


Photo 14: Des-Bee-Dove Mine Site - P-J Reference Area



VEGETATION SAMPLE AREAS 2007

DES-BEE-DOVE RECLAIMED MINE SITE

MT. NEBO SCIENTIFIC, INC.
Springville, UT

Base map prepared by:
ENERGY WEST MINING CO.
Huntington, UT

DES-BEE-DOVE MINE SITE

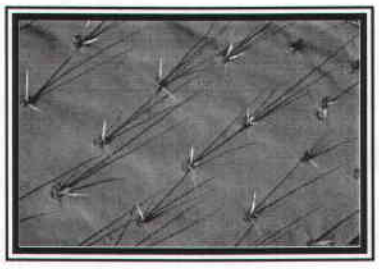
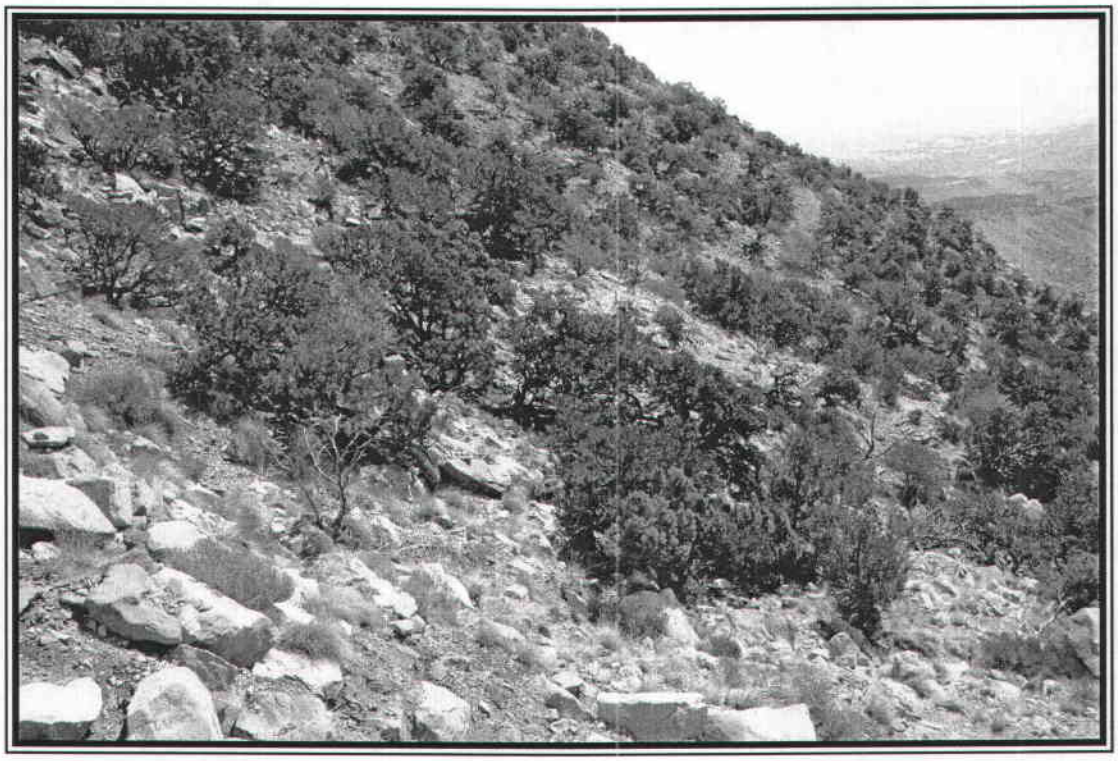


Table 29: Cover and frequency by plant species at the Des-Bee-Dove Mine site.

PINYON-JUNIPER REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Cercocarpus ledifolius	0.50	2.18	5.00
Juniperus osteosperma	0.75	3.27	5.00
Pinus edulis	4.25	12.77	10.00
UNDERSTORY			
SHRUBS			
Juniperus osteosperma	3.75	9.07	25.00
Cercocarpus ledifolius	1.75	4.55	20.00
Pinus edulis	2.00	6.78	10.00
FORBS			
GRASSES			
Elymus salinus	16.75	11.65	90.00

Table 30: Total cover and composition at the at the Des-Bee-Dove Mine site.

PINYON-JUNIPER REFERENCE AREA COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	5.50	12.93
Understory Living Cover (u)	24.25	9.65
Litter	13.50	14.59
Bareground	15.75	9.26
Rock	46.50	13.24
o + u	29.75	11.12
% COMPOSITION		
Shrubs	28.12	37.17
Forbs	0.00	0.00
Grasses	71.88	37.17



Des-Bee-Dove Mine Site: Pinyon-Juniper Reference Area

Salt Desert Reference Area

Table 31: Cover and frequency by plant species at the Des-Bee-Dove Mine site.

SALT DESERT REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Atriplex confertifolia	3.25	6.76	20.00
Atriplex gardneri	16.05	18.22	55.00
Chrysothamnus viscidiflorus	0.25	1.09	5.00
Eriogonum corymbosum	1.25	4.44	10.00
FORBS			
GRASSES			
Elymus salinus	13.95	12.92	65.00

Table 32: Total cover and composition at the at the Des-Bee-Dove Mine site.

SALT DESERT REFERENCE AREA COVER	MEAN	STD. DEV.
Total Living Cover	34.75	14.01
Litter	9.70	7.86
Bareground	37.00	20.94
Rock	18.55	15.44
% COMPOSITION		
Shrubs	59.59	37.19
Forbs	0.00	0.00
Grasses	40.41	37.19

Des-Bee-Dove Mine Site: Salt Desert Reference Area

PacifiCorp
Energy West Mining Company
Deer Creek Mine
Division of Oil, Gas, and Mining Permit Number:
C/015/0018
2007 Annual Report

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an x.*

GENERAL INFORMATION

Permittee Name	PacifiCorp
Mine Name	**Deer Creek Mine**
Operator Name (If other then permittee)	Energy West Mining
Permit Expiration Date	July 6, 2009
Permit Number	C/015/0018
Authorized Representative Title	Geological and Environmental Affairs Manager
Phone Number	(435) 687-4712
Fax Number	(435) 687-2695
E-mail Address	Ken.fleck@pacificorp.com
Mailing Address	P.O. Box 310 Huntington, Utah 84528
Designated Representative	Ken Fleck
Resident Agent	Ken Fleck
Resident Agent Mailing Address	Same as above
Number of Binders Submitted	2

IDENTIFICATION OF OTHER PERMITS

Identify other permits that are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expiration Date
MSHA Mine ID(s)	42-00121	Deer Creek Mine	None
MSHA Impoundment(s)			
NPDES/UPDES Permit(s)	UT0023604	Outfalls 001 and 002, consisting of mine and sediment pond discharges	11/30/2012
PSD Permit(s) (Air)	DAQE-AN239003-02	Issued 6/14/02, Deer Creek Mine Tipple	None
	DAQE-694-91	Issued 12/5/91, Waste Rock Site	None

Other

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and under the approved plan that must be periodically submitted to the Division. Specify whether the information is included as Appendix A to this report or currently on file with the Division.

Certified Reports:	Required		Included or DOGM file location		Comments
	Yes	No	Included	Vol, Chapter, Page	
Excess Spoil Piles	☐	☐	☐		
Refuse Piles	☐	☒	☒		DOGM receives these reports quarterly. Refer to Appendix A
Impoundments	☐	☒	☒		DOGM receives these reports quarterly. Refer to Appendix A
Other					
	☐	☐	☐		
	☐	☐	☐		

COMMITMENTS AND CONDITIONS

The Permittee is responsible for ensuring annual technical commitments in the MRP and conditions accepted with the permit are completed throughout the year. The Division has identified these commitments below and has provided space for you to report what you have done during the past year for each commitment. If the particular section is blank, no commitment has been identified and no response is required for this report. If a written response is required, it should be filed under Appendix B to this report.

Admin R645-301-100	
Has this commitment been acted on this year? Yes ☒ No ☐ Not Required for this year. ☐	**Title:** TRAIL **Objective:** Construct a new trailhead and parking pad at the east end of the facilities site. **Frequency:** Once. **Status:** Pending Rilda portal construction in 2005. **Reports:** Annual report. **Citation:** MRP, Sec. 526.116.2, p. 34. Note: Trail head and parking was completed in 2007. Trail will be completed in 3rd qtr. 2008.
Soils R645-301-200	
Has this commitment been acted on this year? Yes ☒ No ☐ Not Required for this year. ☐	· **Title: REVEGETATION** · **Objective:** Revegetate previously disturbed areas to nondisturbed standards. · **Frequency:** Annual. · **Status:** Pending Rilda portal construction in 2005 and reclamation. · **Reports:** Annual report. · **Citation:** MRP, Sec. 330, p. 16, #1 of list. Note: All areas except sediment pond area have been completed. Sediment pond construction will be completed in 3rd qtr. 2008.

Has this commitment been acted on this year? Yes ☒ No ☐ Not Required for this year. ☐	**Title: RILDA SOIL SALVAGE PLAN** **Objective**: The Permittee will have a qualified person (familiar with the soil survey and salvage plan) on site to monitor the soil salvage operations (Section R645-301-231.100). **Frequency**: During any construction. **Status**: Ongoing. **Reports**: As-built volumes of salvaged soil. **Citation**: Vol. 11. Section R645-301-231.100. **Note: As-Built volumes have not yet been reported.**
Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☐	**Title: RILDA TOPSOIL PILE CONSTRUCTION** **Objective**: After construction, the stockpile will be surveyed and the volume of topsoil stockpiled will be documented. **Frequency**: After construction. **Status**: Ongoing. **Reports**: As-built of topsoil stockpile. **Citation**: Vol. 11. R645-301-232. **Note: See above notation.**
Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☒	**Title: SUBSOIL TESTING** **Objective**: Regraded subsoil will be sampled on 500 ft intervals to a depth of four ft (three or four samples for the 2,000 linear ft in the facilities area). The samples will be analyzed on site for pH and EC. Problem areas will be further sampled and sent to a laboratory for analysis. **Frequency**: Final regrading. **Status**: Ongoing . **Reports**: Laboratory analysis to be provided to the Division. **Citation**: Vol. 11. Section R645-301-231.300.
Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☒	**Title: TOPSOIL HANDLING TESTING PLAN** **Objective**: Three composite samples will be taken from the facilities area and sediment pond. Samples will be analyzed for parameters to be compared with baseline information and to determine the need for amendments, including fertilizer **Frequency**: Final Reclamation **Status**: Ongoing. **Reports**: Annual. **Citation**: Vol. 11. Section R645-301-242.

Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☒	**Title: BULK DENSITY TESTING** **Objective**: The experimental practice will provide an indication of the degree of compaction related to the loading of the in place soil through measurements of the bulk density of the in-place soil before and after burial. Bulk density of the Rominger Mine soils will occur to a depth of 6 ft. (or lithic contact) prior to and after disturbance. **Frequency**: Prior to subsoil pile construction and again during reclamation, using a split spoon. **Status**: once before construction and once again during reclamation **Reports**: Analysis to be provided to the Division. A [bulk] change greater than 10% from an undisturbed state will require that the Permittee increase the gouging depth by one foot. **Citation**: Vol. 11. Chapter 2 R645-301-242 and R645-302-216 and Experimental Practice pgs.36 and 40. **Note: No subsoil has been placed at the Romminger Mine area to date.**
Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☒	**Title: POLYACRYLAMIDE APPLICATION** **Objective**: Reduce erosion from 1.6 acres undisturbed soil on 60 degree slopes buried by subsoil and unearthed at reclamation. Fill removal will be done by small earth moving equipment and/or by hand labor to minimize disturbance of the topsoil. The soil will be re-exposed in 5-10 foot horizontal zones that can and worked by hand from the adjacent pad fill level. (After the pad fill has been removed, the backfilled culvert will serve as the primary access way for machinery and materials associated with the remaining reclamation efforts.) Slopes steeper than 50% will be treated with an anionic polyacrylamide (PAM) during seeding to increase cohesion and infiltration of water without disrupting soil structure. Bareroot or containerized plant stock will be pre-treated with PAM and used as enhancement plantings on the re-exposed, steep slopes. **Frequency**: Final Reclamation **Status**: during reclamation **Reports**: During reclamation. **Citation**: Vol. 11. Chapter 2 Section R645-302-216 and Experimental Practice Plan pg.40.
Biology R645-301-300	
Has this commitment been acted on this year? Yes ☒ No ☐ Not Required for this year. ☐	**Title: WILDLIFE** · **Objective**: Adhere to wildlife exclusionary periods. · **Frequency**: Annual · **Status**: Ongoing during Rilda portal construction in 2005 and reclamation. · **Reports**: Annual Report. · **Citation**: MRP, Sec. 322, p. 10; Sec. 330, p.16, #14 in list; Sec. 342, p. 32, #7 in list. Note: No activity in Left Fork except for one access for emergency purposes. Roof fall inby Rilda escapeway portal.
Has this commitment been acted on this year? Yes ☒ No ☐ Not Required for this year. ☐	**Title MACROINVERTEBRATES "AQUATIC".** **Objective**: Monitor macroinvertebrates in Rilda Creek. **Frequency**: Spring/fall two years prior to and spring/fall one year immediately following start of construction. Spring every three years during operations and reclamation. **Status**: On going. Spring/fall 2006 is the anticipated date for the year following construction. Spring 2009 is the anticipated date for the first of the three-year monitoring surveys. **Reports**: Division Annual Report. **Citation**: MRP, Sec. 330, p. 26. **Note: Construction activities still occurring to date.**

Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☐	**Title: FISH "AQUATIC".** **Objective**: DWR will monitor fish in Rilda Creek as part of annual surveys. **Frequency**: Spring/fall two years prior to and spring/fall one year immediately following start of construction. Spring every three years during operations and reclamation. **Status**: On going. Spring/fall 2006 is the anticipated date for the year following construction. Spring 2009 is the anticipated date for the first of the three-year monitoring surveys. **Reports**: Division Annual Report. **Citation**: MRP, Sec. 330, p. 26. **Note: Construction activities still occurring to date.**
Has this commitment been acted on this year? Yes ☒ No ☐ Not Required for this year. ☐	**Title: RAPTORS.** **Objective**: Over-flight surveys. **Frequency**: Yearly. **Status**: On going for life of mine. **Reports**: Upon request. **Citation**: MRP, Sec. 322, Subsec. Terrestrial Species. **Note: Raptor survey report included in confidential file.**
Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☒	**Title: BATS.** **Objective**: Install a "stay-out" sign near a large cavern. **Frequency**: Once. **Status**: Prior to Rilda portal construction in 2005. **Reports**: Not required. **Citation**: MRP, Sec. 330, p. 16, #15 in list. **Note: Typo in permit. Commitment #15 should say (Romminger Mine). No subsoil to date has been stored at the Romminger Mine area.**
Has this commitment been acted on this year? Yes ☒ No ☐ Not Required for this year. ☐	**Title: RILDA CREEK.** **Objective**: Enhance riparian corridor along the Rilda Creek. **Frequency**: As necessary. **Status**: Initiate 180 days after Rilda portal construction begins in 2005. **Reports**: Not required. **Citation**: MRP, Sec. 330, Tab. 300-5. **Note: Sediment contributions from Rilda Road have been limited through asphalt paving of the road. Reconstruction activities included revegetation and streambank repairs.**
Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☒	**Title: RAT MIDDEN.** **Objective**: Install a fence around a rat midden in Rilda Canyon. **Frequency**: Once with annual repairs. **Status**: Prior to Rilda portal construction in 2005. **Reports**: Annual Report. **Citation**: MRP, Sec. 322. **Note: Fence and signs installed at on-set of construction activities.**

Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☐	**Title: MITIGATION.** **Objective**: Several projects to enhance and mitigate potential impacts associated with Rilda portal facilities. **Frequency**: Annual. **Status**: Pending approval or Rilda portal construction in 2005. **Reports**: Annual Report. **Citation**: MRP, Sec. 330, Tab. 300-5. **Note: Interagency problems with conforming to commitments. Meetings are scheduled to discuss revision of commitments.**
Landuse, Cultural Resources, Air Quality R645-301- 400	
Engineering R645-301-500	
Has this commitment been acted on this year? Yes ☐ No ☒ Not Required for this year. ☒	**Title: SPECIAL MONITORING - CASTLEGATE CLIFF ESCARPMENT** **Objective**: Monitor Cliff Escarpments **Frequency**: Daily measuring during mining. **Status**: Ongoing. **Reports**: Annual. **Citation**: Volume 11 p 28. **Note: No longer mining in this area.**
Geology R645-301-600	
Hydrology R645-301-700	
Bonding & Insurance R645-301-800	
Other Commitments	

*Reminder: If equipment has been abandoned during 2007, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there were any hazardous or toxic materials and any revision to the PHC as necessary.

REPORTING OF OTHER TECHNICAL DATA

List other technical data and information as required under the approved plan, which must be periodically submitted to the Division. Specify whether the information is included as Appendix B to this report or currently on file with the Division.

-The annual Vegetation Monitoring Report is included in Appendix B-

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Change in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is Requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the annual report. Please provide the Department of Commerce, Annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other change as necessary regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include certified financial statements, audits or worksheets, which may be required to meet bonding requirements. Specify whether the information is currently on file with the Division or included as Appendix C to the report.

Legal / Financial Update	**Required** Yes	No	**Included or** Included	**DOGM File location** Vol, Chapter, Page	**Comments**
Department of Commerce, Annual Report Officers	☐	☒	☐	☒ Legal/Financial Volume	Amendment pending approval. See Appendix C
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

MINE MAPS

Copies of mine maps, current and up-to-date through at least December 31, 2007, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.240. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential. Please provide a CD.

Map Number(s)	**Map Title/ Description**	**Confidential** Yes	No
Mine Workings Map		☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

OTHER INFORMATION

Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.

Additional attachment to this report? **Yes** ☒ **No** ☐

Annual Raptor Survey Report (Confidential Report, submitted separately)
Subsidence Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)
Hydrology Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/018	**Report Date**	Sept. 26, 2007
Mine Name	Deer Creek Mine		
Company Name	Energy West Mining		
Impoundment Identification	**Impoundment Name**	**Mine Site Pond:**	**Waste Rock Pond:**
	Impoundment Number		
	UPDES Permit Number	UT-0023604-001	
	MSHA ID Number	N/A	N/A

3

Inspection Date	9/12/07 **Waste Rock Pond** 9/10/07	
Inspected By	Rick Cullum / John Christensen	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	3rd Quarter 2007 Inspection	

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

	Mine Site Pond	**Waste Rock Pond**
Conditions, Comments Etc.	No hazards observed.	No hazards observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

	Mine Site Pond:	**Waste Rock Pond:**
60% Design Storage Capacity	1.87 A.F. at 7213.1 ft.	.59 A.F. at 6312.7 ft.
100% Sediment Capacity	3.12 A.F. at 7216.0 ft.	.98 A.F. at 6313.45 ft.

Principle and emergency spillway elevations.

	Mine Site Pond	**Waste Rock Pond**
Principle Spillway Elevation (F.A.S.L.):	7218.64	6318.0
Emergency Spillway Elevation	7232.03	6318.0

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/018	**Report Date**	MARCH. 30, 2007
Mine Name	Deer Creek Mine		
Company Name	Energy West Mining		
Impoundment Identification	**Impoundment Name**	**Mine Site Pond:**	**Waste Rock Pond:**
	Impoundment Number		
	UPDES Permit Number	UT-0023604-001	
	MSHA ID Number	N/A	N/A

3

Inspection Date	3/30/07 **Waste Rock Pond** 3/30/07	
Inspected By	Rick Cullum / John Christensen	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	1ST Quarter 2007 Inspection	

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

	Mine Site Pond	**Waste Rock Pond**
Conditions, Comments Etc.	No hazards observed.	No hazards observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

	Mine Site Pond:	**Waste Rock Pond:**
60% Design Storage Capacity	1.87 A.F. at 7213.1 ft.	.59 A.F. at 6312.7 ft.
100% Sediment Capacity	3.12 A.F. at 7216.0 ft.	.98 A.F. at 6313.45 ft.

Principle and emergency spillway elevations.

	Mine Site Pond	**Waste Rock Pond**
Principle Spillway Elevation (F.A.S.L.):	7218.64	6318.0
Emergency Spillway Elevation	7232.03	6318.0

Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2

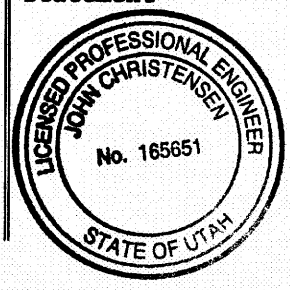
associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

	Mine Site Pond	Waste Rock Pond
Water Elevation	7227.73 few ice chunks.	None
Discharging	Yes	Never
Inlet, Outlet, Spillway Conditions	Good	Good
Out slope Conditions	No Change	No Change

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

	Mine Site Pond	Waste Rock Pond
Sediment Volume	2.76 A.F.	None
Remaining Sediment Storage Capacity	88% at 7215.1 ft. 0.36 A.F.	0.98 A.F.
Water impounded	6.80 A.F.	NONE
Changes, Comments, etc.	The pond was partially cleaned in the fourth quarter of 2005. The pond is being decanted in preparation for cleaning.	No change from last inspection.

Qualification Statement



I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 4/10/07

Signature: Richard Cullum **Date:** 4-11-07

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/018	**Report Date**	JUNE 26, 2007
Mine Name	Deer Creek Mine		
Company Name	Energy West Mining		
Impoundment Identification	**Impoundment Name**	**Mine Site Pond:**	**Waste Rock Pond:**
	Impoundment Number		
	UPDES Permit Number	UT-0023604-001	
	MSHA ID Number	N/A	N/A

3

Inspection Date	6/25/07 **Waste Rock Pond** 6/15/07	
Inspected By	Rick Cullum / John Christensen	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	2ND Quarter 2007 Inspection	

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

	Mine Site Pond	**Waste Rock Pond**
Conditions, Comments Etc.	No hazards observed.	No hazards observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

	Mine Site Pond:	**Waste Rock Pond:**
60% Design Storage Capacity	1.87 A.F. at 7213.1 ft.	.59 A.F. at 6312.7 ft.
100% Sediment Capacity	3.12 A.F. at 7216.0 ft.	.98 A.F. at 6313.45 ft.

Principle and emergency spillway elevations.

	Mine Site Pond	**Waste Rock Pond**
Principle Spillway Elevation (F.A.S.L.):	7218.64	6318.0
Emergency Spillway Elevation	7232.03	6318.0

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT | **Page 1 of 2**

Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

	Mine Site Pond	Waste Rock Pond
Water Elevation	7222.88	None
Discharging	Yes	Never
Inlet, Outlet, Spillway Conditions	Good	Good
Out slope Conditions	No Change	No Change

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

	Mine Site Pond	Waste Rock Pond
Sediment Volume	1.25 A.F. @ 7211.6	None
Remaining Sediment Storage Capacity	.62 A.F.	0.59 A.F.
Water impounded	5.60 A.F.	NONE
Changes, Comments, etc.	The pond was cleaned in the second quarter of 2007.	No change from last inspection.

Qualification Statement

LICENSED PROFESSIONAL ENGINEER
JOHN CHRISTENSEN
No. 165651
STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 7/20/07

Signature: Richard Cullum **Date:** 7-23-07

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2

Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

	Mine Site Pond	Waste Rock Pond
Water Elevation	7224.62	None
Discharging	Yes	Never
Inlet, Outlet, Spillway Conditions	Good	Good
Out slope Conditions	No Change	No Change

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

	Mine Site Pond	Waste Rock Pond
Sediment Volume	1.25 A.F. @ 7211.6	None
Remaining Sediment Storage Capacity	.62 A.F.	0.59 A.F.
Water impounded	6.53 A.F.	NONE
Changes, Comments, etc.	The pond was cleaned in the second quarter of 2007.	No change from last inspection.

Qualification Statement

LICENSED PROFESSIONAL ENGINEER JOHN CHRISTENSEN No. 165651 STATE OF UTAH

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 10/31/07

Signature: Richard Cullum **Date:** 10-31-07

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/018	**Report Date**	Dec. 21, 2007
Mine Name	Deer Creek Mine		
Company Name	Energy West Mining		
Impoundment Identification	**Impoundment Name**	**Mine Site Pond:**	**Waste Rock Pond:**
	Impoundment Number		
	UPDES Permit Number	UT-0023604-001	
	MSHA ID Number	N/A	N/A

3

Inspection Date	12/13/07 **Waste Rock Pond** 12/10/07	
Inspected By	Rick Cullum / John Christensen	
Reason for Inspection (Annual, Quarterly or Other Periodic Inspection, Critical Installation, or Completion of Construction)	4th Quarter 2007 Inspection	

1. **Describe any appearance of any instability, structural weakness, or any other hazardous condition.**

	Mine Site Pond	**Waste Rock Pond**
Conditions, Comments Etc.	No hazards observed.	No hazards observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

	Mine Site Pond:	**Waste Rock Pond:**
60% Design Storage Capacity	1.87 A.F. at 7213.1 ft.	.59 A.F. at 6312.7 ft.
100% Sediment Capacity	3.12 A.F. at 7216.0 ft.	.98 A.F. at 6313.45 ft.

Principle and emergency spillway elevations.

	Mine Site Pond	**Waste Rock Pond**
Principle Spillway Elevation (F.A.S.L.):	7218.64	6318.0
Emergency Spillway Elevation	7232.03	6318.0

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2

Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

	Mine Site Pond	Waste Rock Pond
Water Elevation	7227.47	None
Discharging	Yes	Never
Inlet, Outlet, Spillway Conditions	Good	Good
Out slope Conditions	No Change	No Change

*See "Hydrologic Monitoring Data" report submitted quarterly to DOGM for monitoring information.

	Mine Site Pond	Waste Rock Pond
Sediment Volume	1.25 A.F. @ 7211.6	None
Remaining Sediment Storage Capacity	.62 A.F.	0.59 A.F.
Water impounded	8.30 A.F.	NONE
Changes, Comments, etc.	The pond was cleaned in the second quarter of 2007. The pond was frozen at time of the inspection.	No change from last inspection.

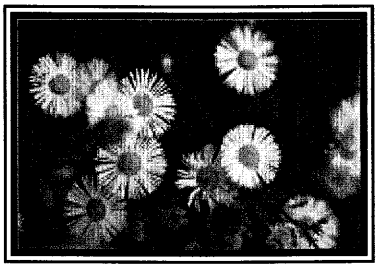
Qualification Statement

I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 1/10/08

Signature: Richard Cullimore **Date:**

DEER CREEK MINE SITE



Riparian Reference Area

Table 9: Cover and frequency by plant species at the Deer Creek Mine site.

RIPARIAN REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Abies concolor	3.25	10.03	10.00
Acer glabrum	6.25	14.04	20.00
Cornus sericea	1.00	4.36	5.00
Populus angustifolia	11.50	17.76	35.00
Pseudotsuga menziesii	1.00	4.36	5.00
UNDERSTORY			
SHRUBS			
Abies concolor	3.25	8.70	15.00
Acer glabrum	2.25	6.80	10.00
Cornus sericea	2.00	8.72	5.00
Holodiscus dumosa	1.00	4.36	5.00
Mahonia repens	0.25	1.09	5.00
Populus angustifolia	0.25	1.09	5.00
Pseudotsuga menziesii	1.00	3.39	10.00
Rosa woodsii	7.75	16.92	25.00
Symphoricarpos oreophilus	2.25	9.81	5.00
FORBS			
Cirsium sp.	0.50	1.50	10.00
Erigeron engelmannii	9.25	12.58	45.00
GRASSES			
Agrostis stolonifera	4.75	12.30	15.00
Bromus carinatus	0.25	1.09	5.00
Dactylis glomeratus	1.00	4.36	5.00
Stipa hymenoides	0.50	2.18	5.00

Table 10: Total cover and composition at the at the Deer Creek Mine site.

RIPARIAN REFERENCE AREA COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	23.00	17.49
Understory Living Cover (u)	36.25	18.02
Litter	37.50	21.82
Bareground	12.25	12.89
Rock	14.00	13.10
o + u	59.25	11.32
% COMPOSITION		
Shrubs	66.08	41.26
Forbs	22.22	29.68
Grasses	11.70	25.36

Deer Creek Mine: Riparian Reference Area

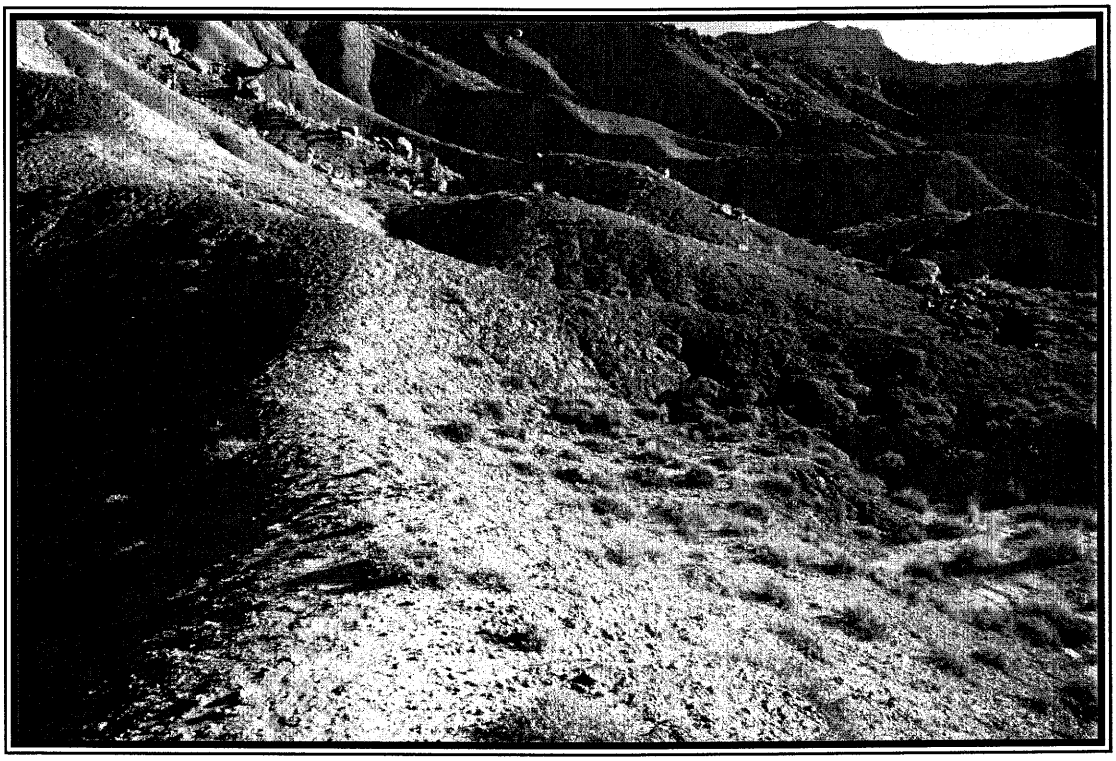
Saltbrush Reference Area

Table 11: Cover and frequency by plant species at the Deer Creek Mine Waste Rock site.

SALTBRUSH REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Artemisia nova	0.25	1.09	5.00
Atriplex confertifolia	4.25	6.94	30.00
Atriplex corrugata	4.10	8.83	20.00
Atriplex gardneri	8.50	9.10	55.00
Chrysothamnus nauseosus	0.75	2.38	10.00
Eriogonum corymbosum	2.00	6.78	10.00
Tetradymia spinescens	0.25	1.09	5.00
FORBS			
GRASSES			
Elymus salinus	3.50	7.26	25.00

Table 12: Total cover and composition at the at the Deer Creek Mine Waste Rock site.

SALTBRUSH REFERENCE AREA COVER	MEAN	STD. DEV.
Total Living Cover	23.60	10.01
Litter	7.55	2.69
Bareground	58.25	14.86
Rock	10.60	8.48
% COMPOSITION		
Shrubs	85.17	28.76
Forbs	0.00	0.00
Grasses	14.83	28.76



Deer Creek Mine: Saltbush Reference Area

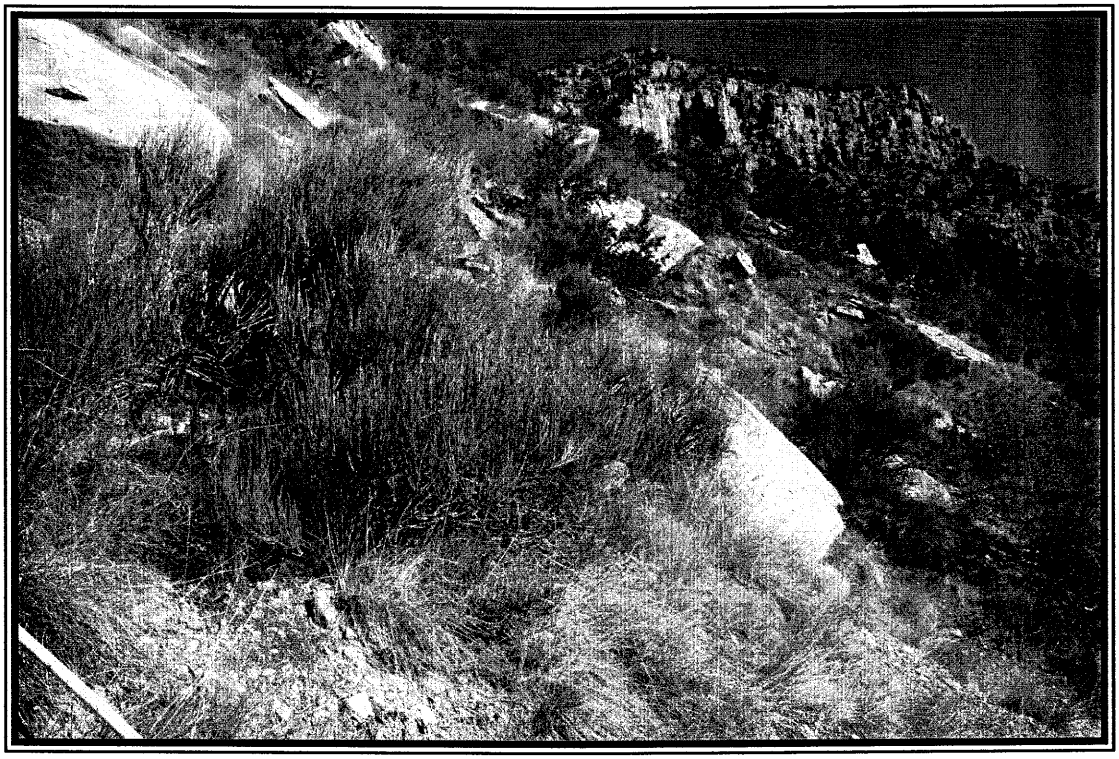
Pinyon-Juniper Reference Area

Table 13: Cover and frequency by plant species at the Deer Creek Mine site.

PINYON-JUNIPER REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Amelanchier utahensis	1.50	6.54	5.00
Juniperus osteosperma	3.25	7.79	15.00
Pseudotsuga menziesii	0.50	2.18	5.00
UNDERSTORY			
SHRUBS			
Amelanchier utahensis	7.75	13.37	30.00
Ephedra viridis	6.00	10.68	30.00
Eriogonum corymbosum	1.50	3.91	15.00
Juniperus osteosperma	1.50	4.77	10.00
Pseudotsuga menziesii	1.50	6.54	5.00
FORBS			
Penstemon palmeri	0.25	1.09	5.00
GRASSES			
Elymus salinus	20.00	10.72	90.00

Table 14: Total cover and composition at the at the Deer Creek Mine site.

PINYON-JUNIPER REFERENCE AREA COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	5.25	9.68
Understory Living Cover (u)	38.50	14.24
Litter	15.50	5.68
Bareground	15.25	7.66
Rock	30.75	12.17
o + u	43.75	13.03
% COMPOSITION		
Shrubs	43.66	28.00
Forbs	1.67	7.26
Grasses	54.67	26.29



Deer Creek Mine: Pinyon-Juniper Reference Area

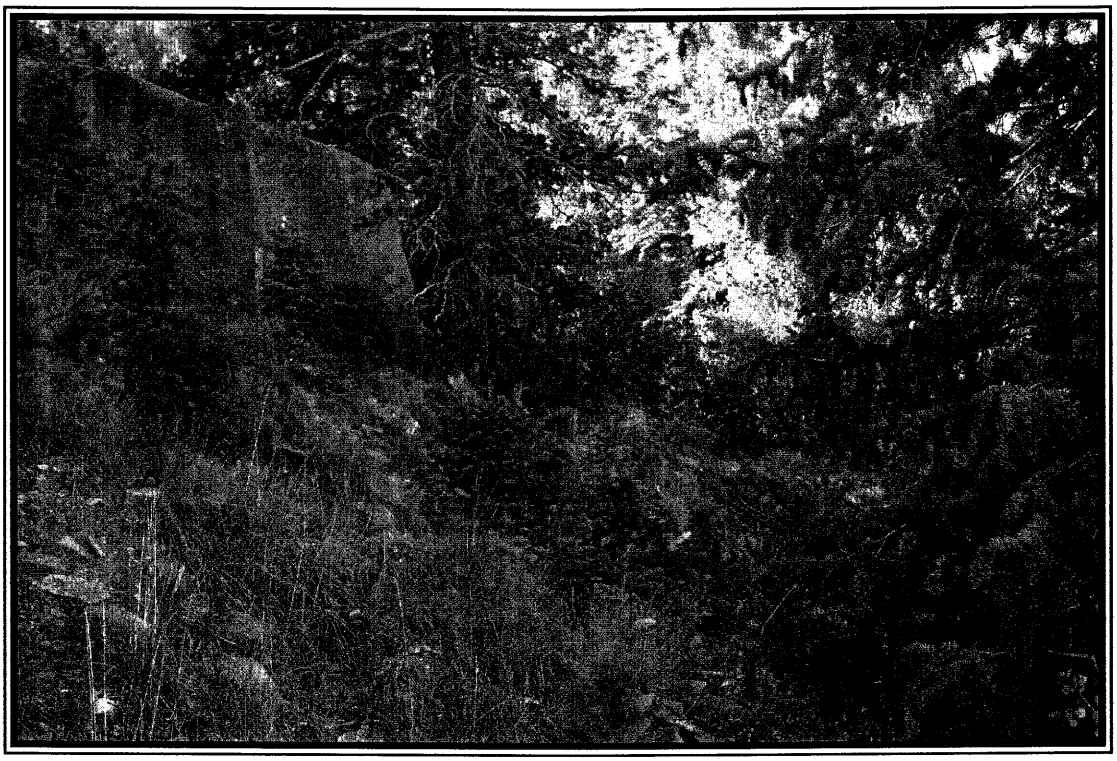
Mixed Conifer Reference Area

Table 15: Cover and frequency by plant species at the Deer Creek Mine site.

MIXED CONIFER REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Abies concolor	0.25	1.09	5.00
Amelanchier utahensis	1.00	4.36	5.00
Pinus edulis	1.25	5.45	5.00
Pinus flexilis	1.25	5.45	5.00
Pseudotsuga menziesii	2.25	6.80	10.00
UNDERSTORY			
SHRUBS			
Abies concolor	5.25	10.78	25.00
Amelanchier utahensis	0.50	2.18	5.00
Eriogonum corymbosum	3.50	10.97	10.00
Juniperus communis	0.75	3.27	5.00
Juniperus scopulorum	0.75	2.38	10.00
Mahonia repens	0.85	2.06	15.00
Pachistima myrsinites	1.00	2.55	15.00
Pinus edulis	1.75	7.63	5.00
Pseudotsuga menziesii	6.50	7.43	55.00
Symphoricarpos oreophilus	6.40	7.89	55.00
FORBS			
Antennaria sp.	0.25	1.09	5.00
Erigeron engelmannii	1.50	2.78	25.00
Galium biflorum	1.25	2.68	20.00
Machaeranthera grindelioides	0.25	1.09	5.00
Petradoria pumila	0.25	1.09	5.00
GRASSES			
Elymus salinus	6.50	7.43	50.00
Thalictrum fendleri	0.75	1.79	15.00

Table 16: Total cover and composition at the at the Deer Creek Mine site.

MIXED CONIFER REFERENCE AREA COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	6.00	9.95
Understory Living Cover (u)	38.00	8.12
Litter	22.00	13.08
Bareground	13.25	7.12
Rock	26.75	9.26
o + u	44.00	10.91
% COMPOSITION		
Shrubs	70.82	25.26
Forbs	9.34	12.07
Grasses	19.84	20.06



Deer Creek Mine: Mixed Conifer Reference Area

VEGETATION MONITORING: REFERENCE AREAS

2007

ENERGY WEST MINE AREAS

Prepared by

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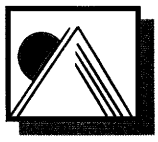

March 2008

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VEGETATION MONITORING
REFERENCE AREAS
2007

INTRODUCTION

Vegetation reference areas are plant communities that have been chosen to represent standards for future revegetation success. Often the reference areas were chosen prior to any land disturbance proposed by a mine operator. In choosing a reference area for a proposed new disturbance site, attempts are made to select a plant community that has similar environmental variables as the site that will be disturbed and ultimately be reclaimed. The environmental considerations include variables such as soil type, exposure, elevation, plant species, slope, etc. Both the proposed disturbed and reference areas are then quantitative sampled. The datasets are summarized and compared statistically to determine if they are similar enough for the reference area to be used for future revegetation success standards. If the reference area meets the criteria, it is set aside to remain undisturbed until final reclamation and revegetation has occurred. At that time the reference area is used to make comparisons with the reclaimed plant community during the "responsibility period". At the end of this period (usually ten years are required), if the revegetated land meets those standards set by the reference area, final bond release can be obtained by the mine operator through the State of Utah, Division of Oil, Gas & Mining (DOGM).

The purpose of the vegetation monitoring study in 2007 is to provide recent quantitative data for

total cover, cover by plant species, species frequency and lifeform composition information for all reference areas previously chosen to represent future revegetation success standards for disturbed lands on the properties of the Energy West Mining Company. Upon review of the summarized monitoring data, determinations can be made as to whether or not the reference areas continue to be viable for future success standards. The following sites along with their respective reference areas including sample sizes have been studied for this report:

STUDY AREAS AND SAMPLE SIZES FOR THE REFERENCE AREA MONITORING STUDY (2007)

		Sample Sizes (n)
1.	**COTTONWOOD MINE NEW WASTE ROCK SITE**	
	a. Black Sagebrush Reference Area	20
	b. Pinyon-Juniper Reference Area	20
	c. Gardner Saltbush Reference Area	20
2.	**COTTONWOOD MINE SITE**	
	a. Pinyon-Juniper Reference Area	20
3.	**DEER CREEK MINE SITE**	
	a. Riparian Reference Area	20
	b. Saltbush Reference Area	20
	c. Pinyon-Juniper Reference Area	20
	d. Mixed Conifer Reference Area	20
4.	**RILDA CANYON**	
	a. Pinyon-Juniper/Mountain Brush Reference Area (Lower Area)	20
	b. Sagebrush/Grass Reference Area (Undisturbed; Lower Area)	20
	c. Riparian Reference Area (Lower Area)	20
	d. Pinyon-Juniper/Mountain Brush Reference Area (AMR)	0
	e. White Fir/Aspen Reference Area	20
	f. Mountain Brush/Salina Wildrye Reference Area	20
	g. Aspen/Fir/Dogwood Reference Area	20
5.	**DES-BEE-DOVE MINE SITE**	
	a. Pinyon-Juniper Reference Area	20
	b. Salt Desert Reference Area	20
6.	**TRAIL MOUNTAIN MINE SITE**	
	a. Trail Mountain Reference Area	20
7.	**COTTONWOOD FAN PORTAL AREA**	
	a. Pinyon-Juniper Reference Area	60

METHODS

Transect & Quadrat Placement

Transect lines for quantitative sampling the vegetation were randomly placed throughout the reference areas to adequately represent each site as a whole. Sample quadrats were then randomly placed along the transect lines for sampling.

Cover, Frequency & Composition

Cover estimates were made using ocular methods with meter square quadrats. Species composition and relative frequencies were also assessed from the quadrats. Additional information recorded on the raw data sheets were: estimated precipitation, slope, exposure, grazing use, animal disturbance and other appropriate notes. Plant nomenclature follows "A Utah Flora" (Welsh et al. 2003).

Sample Size & Adequacy

Sampling adequacy was calculated using formula given below.

$$nMIN = \frac{t^2 s^2}{(dx)^2}$$

where,

nMIN	= minimum adequate sample
t	= appropriate confidence t-value
s	= standard deviation
x	= sample mean
d	= desired change from mean

Photographs

Representative color photographs were taken of the sample areas and have been included in this report.

RESULTS & DISCUSSION

Because this report was intended to provide current cover, frequency and composition information only, the results section is made up primarily of the summarized tables and photographs showing each reference area.

A review of the reference area data with respect to parameters sampled revealed that most of the reference areas had respectable values for native plant communities in the area. Consequently, most of them should be adequate for revegetation success standards at the time of final reclamation, provided they are compared with reclaimed areas that once supported a similar plant community prior to its disturbance by mining and reclamation activities.

There are two exceptions to the statement above about the appropriateness of the reference areas as final revegetation success standards. Firstly, the **Black Sagebrush Reference Area** at the Cottonwood New Waste Rock Site has been disturbed by a recently constructed gas well and supporting powerlines. *At present, it would not be an appropriate candidate to represent revegetation success standards at final reclamation.* Secondly, as described in the verbiage written below about the **Pinyon-Juniper/Mountain Brush Reference Area** (AMR) in Rilda Canyon, this reference area was covered by material from construction activities creating soil storage piles. *Consequently, the area should not be considered as reference area for revegetation success standards.*

RILDA CANYON

Pinyon-Juniper/Mountain Brush Reference Area (Lower Area)

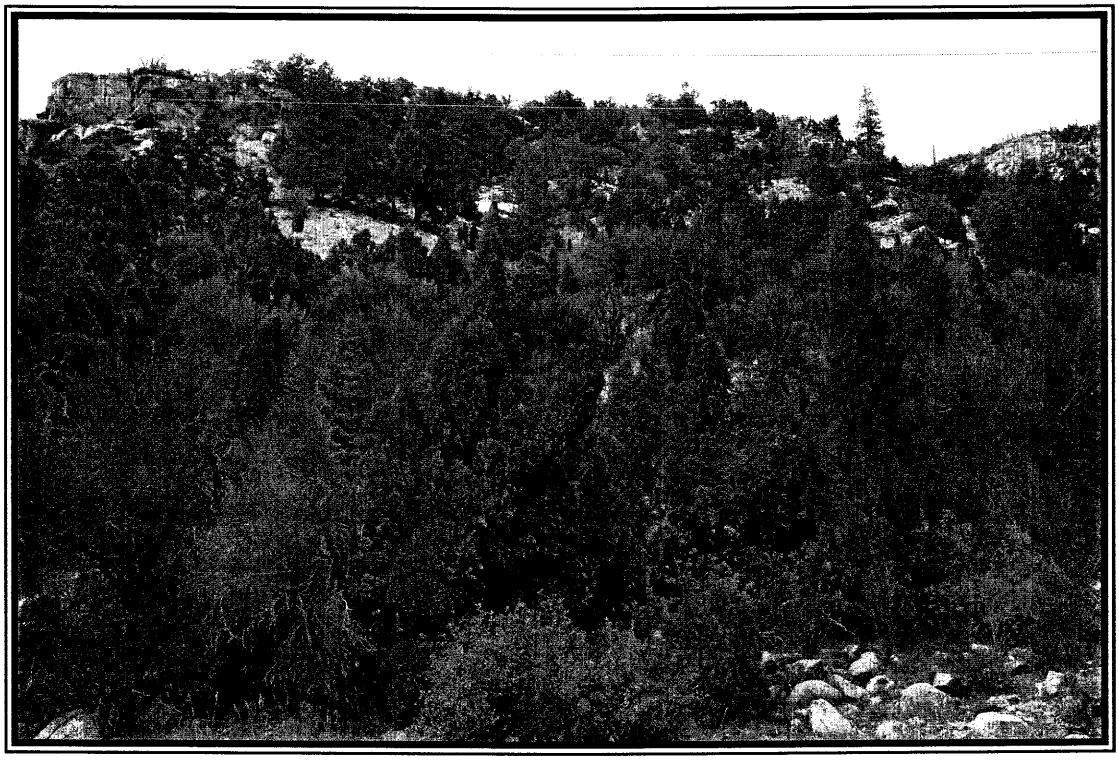
Table 17: Cover and frequency by plant species at the Rilda Canyon area.

PINYON-JUNIPER/MOUNTAIN BRUSH REFERENCE AREA (LOWER AREA)	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Cercocarpus ledifolius	7.75	15.85	20.00
Juniperus scopulorum	2.75	8.29	10.00
Pinus edulis	2.50	10.90	5.00
UNDERSTORY			
SHRUBS			
Cercocarpus ledifolius	11.50	14.92	40.00
Gutierrezia sarothrae	2.00	3.67	25.00
Juniperus osteosperma	1.50	6.54	5.00
Juniperus scopulorum	1.00	4.36	5.00
Mahonia repens	0.25	1.09	5.00
Pinus edulis	2.00	8.72	5.00
Rhus aromatica	0.50	2.18	5.00
FORBS			
Artemisia dracunculus	0.50	1.50	10.00
GRASSES			
Elymus salinus	17.00	12.29	85.00
Elymus spicatus	1.25	5.45	5.00

Table 18: Total cover and composition at the at the Rilda Canyon Area.

PINYON-JUNIPER/MOUNTAIN BRUSH REFERENCE AREA (LOWER AREA)

COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	13.00	18.53
Understory Living Cover (u)	37.50	12.50
Litter	11.00	7.35
Bareground	17.75	8.44
Rock	33.75	14.13
Overstory + Understory	50.50	20.12
% COMPOSITION		
Shrubs	43.65	37.76
Forbs	1.56	4.87
Grasses	54.79	37.13



Rilda Canyon: Pinyon-Juniper Reference Area (Lower Area)

Sagebrush/Grass Reference Area (Undisturbed; Lower Area)

Table 19: Cover and frequency by plant species at the Rilda Canyon area.

SAGEBRUSH/GRASS REFERENCE AREA (UNDISTURBED; LOWER AREA)	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Artemisia tridentata	14.50	10.59	75.00
Chrysothamnus nauseosus	10.00	12.14	55.00
Rosa woodsii	0.25	1.09	5.00
Symphoricarpos oreophilus	3.75	11.92	10.00
FORBS			
Antennaria sp.	3.00	9.14	10.00
Aster sp.	1.00	4.36	5.00
Cirsium sp.	0.25	1.09	5.00
Cynoglossum officinalis	5.75	6.38	50.00
GRASSES			
Elymus smithii	1.00	4.36	5.00
Elymus spicatus	2.00	5.10	15.00
Poa pratensis	20.75	13.44	80.00
Stipa comata	0.75	3.27	5.00

Table 20: Total cover and composition at the at the Rilda Canyon Area.

SAGEBRUSH/GRASS REFERENCE AREA (UNDISTURBED; LOWER AREA)

COVER	MEAN	STD. DEV.
Total Living Cover	63.00	4.85
Litter	25.75	6.38
Bareground	6.45	2.99
Rock	4.80	6.02
% COMPOSITION		
Shrubs	44.96	14.95
Forbs	15.88	17.52
Grasses	39.16	20.72

Rilda Canyon: Sagebrush/Grass Reference Area (Undisturbed; Lower Area)

Riparian Reference Area (Lower Area)

Table 21: Cover and frequency by plant species at the Rilda Canyon area.

RIPARIAN REFERENCE AREA (LOWER AREA)	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Acer glabrum	5.50	17.67	10.00
Alnus incana	3.50	10.62	10.00
Picea pungens	23.00	36.38	35.00
Populus angustifolia	8.75	18.97	20.00
UNDERSTORY			
SHRUBS			
Acer glabrum	1.50	6.54	5.00
Picea pungens	5.75	11.43	25.00
Populus angustifolia	4.65	7.77	35.00
Populus tremuloides	0.35	1.53	5.00
Rosa woodsii	12.75	17.92	50.00
Salix sp.	0.25	1.09	5.00
FORBS			
Achillea millefolium	1.75	3.96	20.00
Artemisia dracunculus	0.75	2.38	10.00
Cynoglossum officinalis	0.25	1.09	5.00
Equisetum arvense	5.75	11.10	45.00
Erigeron engelmannii	0.25	1.09	5.00
Geranium richardsonii	1.00	2.00	20.00
Viola adunca	1.25	5.45	5.00
GRASSES			
Agrostis stolonifera	6.50	13.33	25.00
Bromus carinatus	1.25	3.83	10.00
Carex microptera	1.50	6.54	5.00
Poa pratensis	2.00	6.78	10.00
Poa secunda	0.50	1.50	10.00

Table 22: Total cover and composition at the at the Rilda Canyon Area.

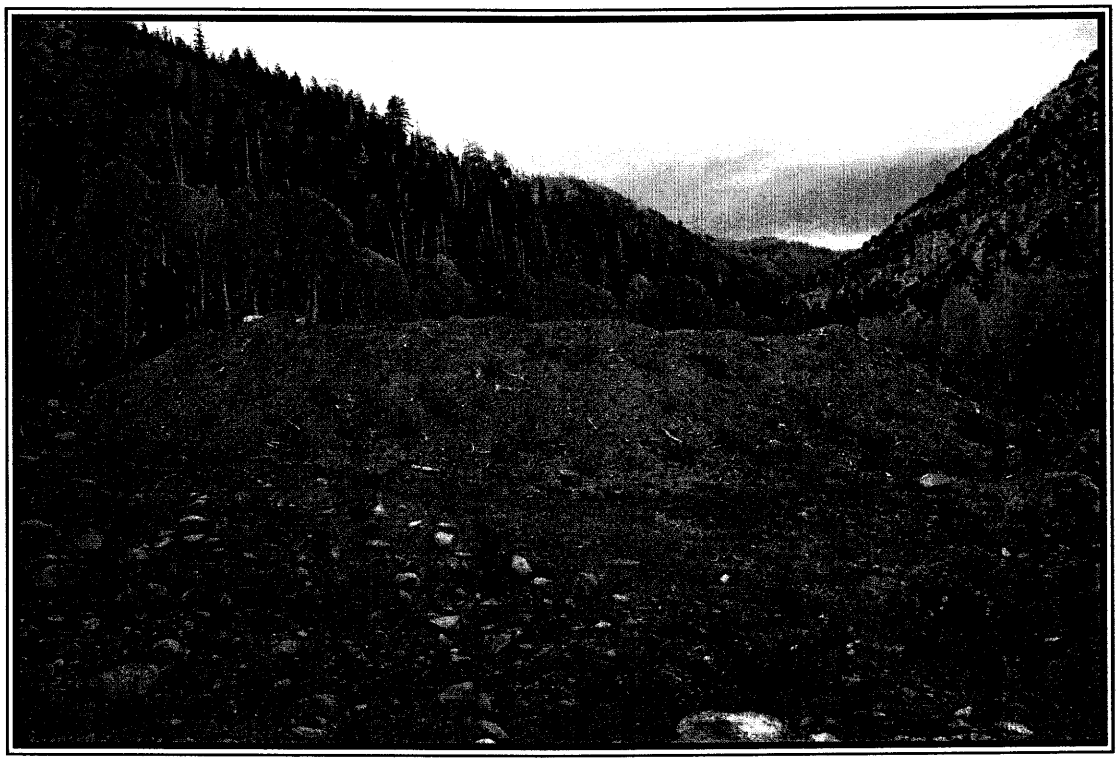
RIPARIAN REFERENCE AREA (LOWER AREA)		
COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	40.75	33.10
Understory Living Cover (u)	48.00	20.58
Litter	33.70	20.40
Bareground	16.10	17.60
Rock	2.20	1.83
o + u	88.75	19.23
% COMPOSITION		
Shrubs	57.31	35.08
Forbs	24.22	33.17
Grasses	18.47	23.39

Rilda Canyon: Riparian Reference Area (Lower Area)

Pinyon-Juniper/Mountain Brush Reference Area (AMR)

The Pinyon-Juniper/Mountain Brush Reference Area (AMR) was an old mine site that was later reclaimed by the State of Utah, Division of Oil, Gas & Mining Abandoned Mine Reclamation Program (AMR). More recently, the site was chosen as a reference area to represent other reclaimed sites in Rilda Canyon that were once again proposed for re-disturbance by the Energy West Mining Company for some new surface facilities in the canyon. Construction plans changed as did the location of the surface facilities (the site was moved up-canyon a short distance). New reference areas were chosen to represent plant communities for the new site. Since data were recorded for all reference areas, the reference areas for the first surface facilities location remain as options for future standards of revegetation success. Therefore, all reference areas were sampled for this document.

The Pinyon-Juniper/Mountain Brush Reference Area here, however, was covered by material from construction to create soil piles (see photograph below). *Consequently, the area cannot be considered a reference area for future use and no quantitative data were recorded for this document.*



Rilda Canyon: Pinyon-Juniper/Mountain Brush Reference Area (AMR)

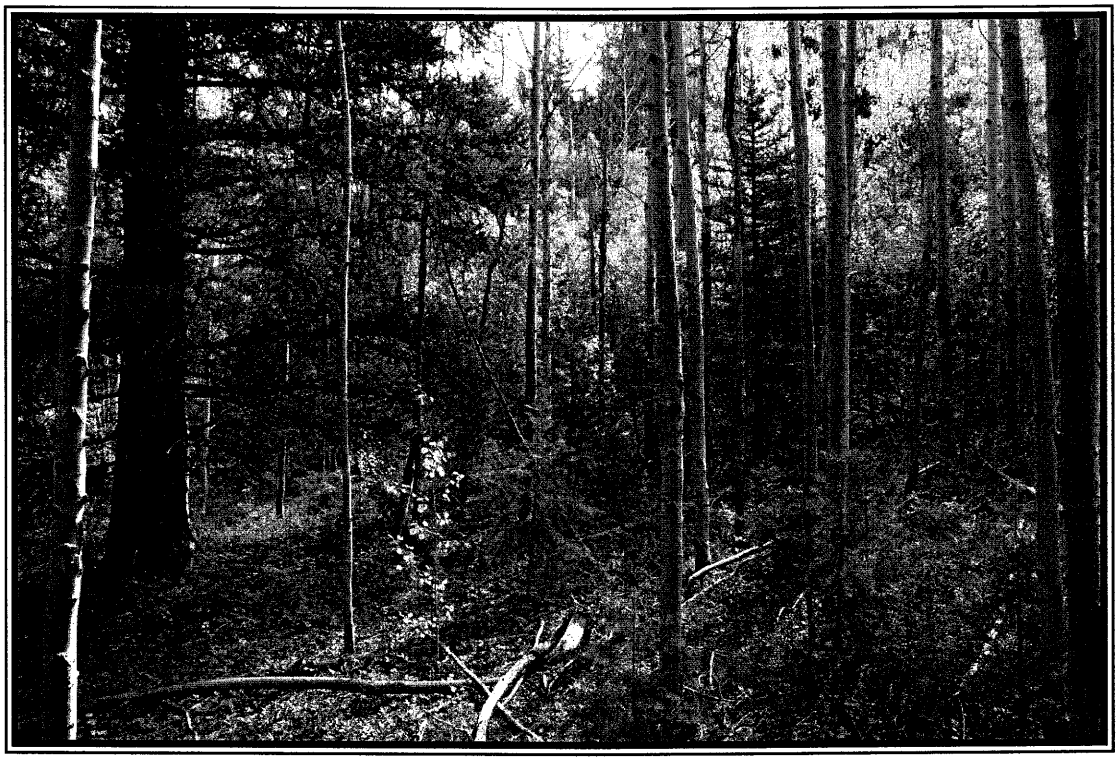
White Fir Aspen Reference Area

Table 23: Cover and frequency by plant species at the Rilda Canyon area.

WHITE FIR/ASPEN REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Abies concolor	4.25	12.77	10.00
Acer glabrum	1.25	5.45	5.00
Picea pungens	11.50	23.72	20.00
Populus angustifolia	2.00	8.72	5.00
Populus tremuloides	18.00	18.06	55.00
UNDERSTORY			
SHRUBS			
Abies concolor	5.50	9.60	30.00
Acer glabrum	0.25	1.09	5.00
Cornus sericea	0.75	2.38	10.00
Juniperus communis	0.75	3.27	5.00
Mahonia repens	18.00	10.89	95.00
Pachistima myrsinites	2.75	4.60	30.00
Picea pungens	1.25	5.45	5.00
Populus tremuloides	2.50	4.61	25.00
Pseudotsuga menziesii	2.00	6.20	10.00
Ribes sp.	0.25	1.09	5.00
Rosa woodsii	2.75	6.02	25.00
Symphoricarpos oreophilus	3.25	5.07	35.00
FORBS			
GRASSES			
Bromus carinatus	0.50	2.18	5.00
Elymus trachycaulus	3.00	6.20	25.00
Poa pratensis	2.50	5.36	20.00
Poa secunda	1.00	3.00	10.00
Thalictrum fendleri	0.75	2.38	10.00

Table 24: Total cover and composition at the at the Rilda Canyon Area.

WHITE FIR/ASPEN REFERENCE AREA COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	37.00	16.39
Understory Living Cover (u)	47.75	11.56
Litter	39.45	12.72
Bareground	9.80	8.39
Rock	3.00	6.31
o + u	84.75	14.27
% COMPOSITION		
Shrubs	84.07	13.41
Forbs	0.00	0.00
Grasses	15.93	13.41



Rilda Canyon: White Fir/Aspen Reference Area

Mountain Brush/Salina WildRye Reference Area

Table 25: Cover and frequency by plant species at the Rilda Canyon area.

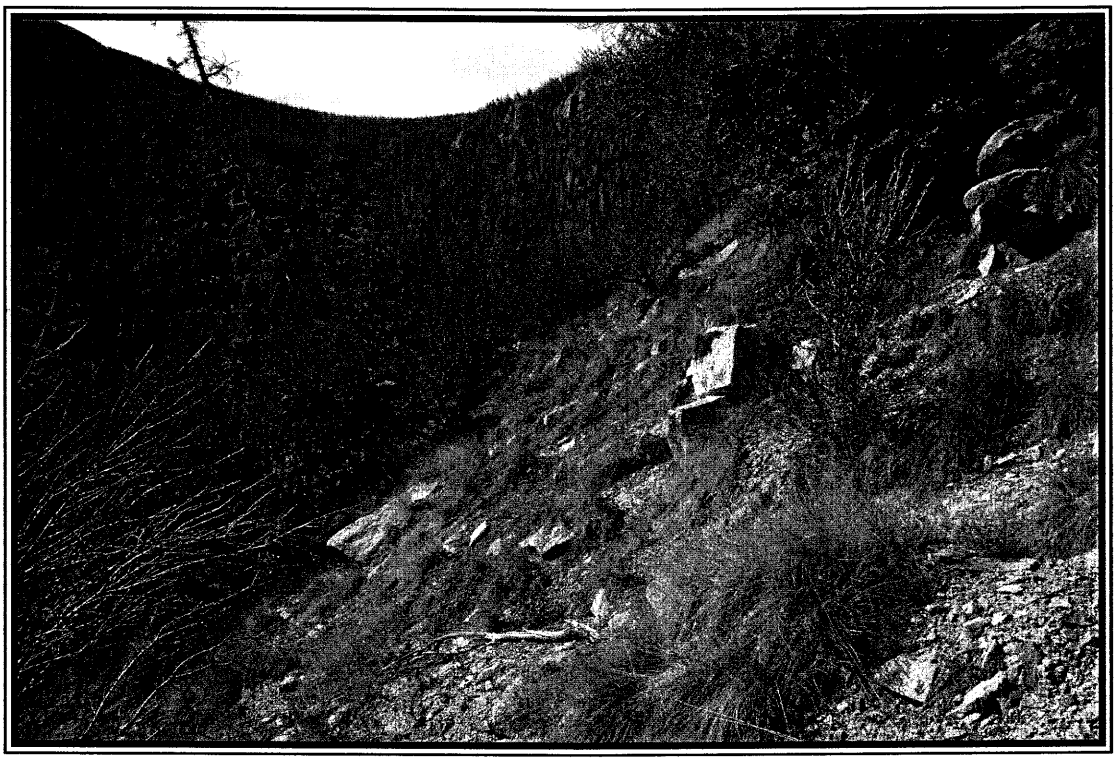
MOUNTAIN BRUSH/SALINA WILDRYE REFERENCE AREA

	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Abies concolor	0.75	3.27	5.00
Cercocarpus ledifolius	6.00	14.63	15.00
Juniperus scopulorum	5.00	11.40	20.00
Pinus edulis	0.50	2.18	5.00
UNDERSTORY			
SHRUBS			
Abies concolor	0.75	3.27	5.00
Cercocarpus ledifolius	4.25	8.98	25.00
Juniperus communis	2.15	5.46	15.00
Mahonia repens	1.00	2.55	15.00
Pinus edulis	1.00	4.36	5.00
Symphoricarpos oreophilus	0.50	1.50	10.00
FORBS			
Erigeron engelmannii	0.25	1.09	5.00
GRASSES			
Elymus salinus	23.60	10.09	100.00

Table 26: Total cover and composition at the at the Rilda Canyon Area.

MOUNTAIN BRUSH/SALINA WILDRYE REFERENCE AREA

COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	12.25	16.47
Understory Living Cover (u)	33.50	11.41
Litter	12.75	11.45
Bareground	22.50	17.21
Rock	31.25	18.70
o + u	45.75	12.87
% COMPOSITION		
Shrubs	29.23	22.46
Forbs	0.63	2.72
Grasses	70.14	21.80



Rilda Canyon: Mountain Brush/Salina Wildrye Reference Area

Aspen/Fir/Dogwood Reference Area

Table 27: Cover and frequency by plant species at the Rilda Canyon area.

ASPEN/FIR/DOGWOOD REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Abies concolor	1.25	3.83	10.00
Acer glabrum	0.75	3.27	5.00
Cornus sericea	4.00	9.70	15.00
Populus angustifolia	4.50	13.59	10.00
Populus tremuloides	19.50	23.82	45.00
Pseudotsuga menziesii	2.50	10.90	5.00
UNDERSTORY			
SHRUBS			
Abies concolor	1.25	4.44	10.00
Acer glabrum	1.00	2.55	15.00
Cornus sericea	8.50	12.76	35.00
Mahonia repens	4.75	7.50	35.00
Pachistima myrsinites	8.75	9.07	70.00
Populus tremuloides	1.75	5.54	15.00
Ribes sp.	2.00	3.67	25.00
Rosa woodsii	2.50	4.87	25.00
Symphoricarpos oreophilus	0.50	2.18	5.00
FORBS			
Thalictrum fendleri	0.25	1.09	5.00
GRASSES			

Table 28: Total cover and composition at the at the Rilda Canyon Area.

ASPEN/FIR/DOGWOOD REFERENCE AREA

COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	32.50	18.94
Understory Living Cover (u)	31.25	14.13
Litter	54.25	16.98
Bareground	13.15	17.01
Rock	1.35	0.91
o + u	63.75	15.32
% COMPOSITION		
Shrubs	99.17	3.63
Forbs	0.83	3.63
Grasses	0.00	0.00

Rilda Canyon: Aspen/Fir/Dogwood Reference Area

APPENDIX C

Legal Financial, Compliance and Related Information

Annual Report of Officers
As submitted to the Utah Department of Commerce

Other change in ownership and control information
As required under R645-301-110

CONTENTS

Copy of the Submitted Amendment for Updated Officers and Directors (Submitted 5/22/2008)

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

Energy West Mining Company
P. O. Box 310
15 No Main Street
Huntington, Utah 84528

May 22, 2008

Utah Coal Program
Utah Division of Oil, Gas, and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Subj: Amendment to Update the Legal and Financial Information, Officer and Director List for the Cottonwood/Wilberg Mine, C/015/0019, Deer Creek Mine, C/015/0018, and Des Bee Dove Mine C/015/0017, and Trail Mountain Mine C/015/0009, Emery County, Utah.

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, hereby submits an updated Appendix A (Officer and Director List) of the supplemental volume entitled "Supplemental Volume, Legal and Financial Information" for Division review.

Included with this submittal are five (5) clean copies of Appendix A for Division review. C1/C2 forms are also included. If the Division finds this format acceptable, please stamp "Incorporated" and return one copy to Energy West for placement into our Supplemental Legal and Financial Volume. If there are any questions or concerns regarding the submitted information, please feel free to contact Dennis Oakley at (435) 687-4825.

Sincerely,

for Kenneth Fleck
Geology and Environmental Affairs Manager

cc Scott Child (IMC)
File

APPLIC..ION FOR COAL PERMIT PROCE 'NG

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: PacifiCorp

Mine: Cottonwood Mine, Deer Creek Mine, Des Bee Dove Mine, Trail Mountain Mine

Permit Number: C/015/0019, C/015/0018, C/015/0017, C/015/0009

Title: Amendment to Update the Legal and Financial Information, Officer and Director List for the Cottonwood/Wilberg Mine, C/015/0019, Deer Creek Mine, C/015/0018, and Des Bee Dove Mine C/015/0017, and Trail Mountain Mine C/015/0009, Emery County, Utah.

Description, Include reason for application and timing required to implement:

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☒ Yes ☐ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☐ Yes ☒ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☐ Yes ☒ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Kenneth Fleck
Print Name

Dennis Oakley
Sign Name, Position, Date

Manager of Environmental Affairs 5/22/08

Subscribed and sworn to before me this 22nd day of May, 2008

Notary Public

My commission Expires: 11-23-2008

Attest: State of UTAH } ss:
County of Emery

DON CHILDS
NOTARY PUBLIC • STATE of UTAH
31 NORTH MAIN STREET
HUNTINGTON, UT 84528
COMM. EXPIRES 11-23-2008

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining

Form DOGM- C1 (Revised March 12, 2002)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: PacifiCorp
Mine: Cottonwood Mine, Deer Creek Mine, Des Bee Dove Mine,Trail Mountain Mine
Permit Number: C/015/0019, C/015/0018, C/015/0017, C/015/0009

Title: Amendment to Update the Legal and Financial Information, Officer and Director List for the Cottonwood/Wilberg Mine, C/015/0019, Deer Creek Mine, C/015/0018, and Des Bee Dove Mine C/015/0017, and Trail Mountain Mine C/015/0009, Emery County, Utah.

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☐ Add	☒ Replace	☐ Remove	Legal and Financial Volume, Appendix A, Entire Appendix (Replace current and summary list of officers and directors)
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
☐ Add	☐ Replace	☐ Remove	
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☐ Add	☐ Replace	☐ Remove	

Any other specific or special instructio	uired for insertion of this proposal into the Mining and Reclamation Plan.	Received by Oil, Gas & Mining

Form DOGM - C2 (Revised March 12, 2002)

PacifiCorp
Energy West Mining Company
Cottonwood/Wilberg Mine
Division of Oil, Gas, and Mining Permit Number:
C/015/0019
2007 Annual Report

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

PACIFICORP
A MIDAMERICAN ENERGY HOLDINGS COMPANY

*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an x.*

GENERAL INFORMATION

Permittee Name	PacifiCorp
Mine Name	Cottonwood/Wilberg Mine
Operator Name (If other then permittee)	Energy West Mining Company
Permit Expiration Date	July 6, 2009
Permit Number	C/015/0019
Authorized Representative Title	Geological and Environmental Affairs Manager
Phone Number	(435) 687-4712
Fax Number	(435) 687-2695
E-mail Address	ken.fleck@pacificorp.com
Mailing Address	P.O. Box 310 Huntington, Utah 84528
Designated Representative	Ken Fleck
Resident Agent	Ken Fleck
Resident Agent Mailing Address	Same as above
Number of Binders Submitted	2

IDENTIFICATION OF OTHER PERMITS

Identify other permits that are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expiration Date
MSHA Mine ID(s)	42-01221	Cottonwood/Wilberg Mine	None
MSHA Impoundment(s)	1211-UT-09-02052-02	North Sediment Pond	None
	1211-UT-09-02052-02	South Sediment Pond	None
NPDES/UPDES Permit(s)	UT0022896	Sites 001, 003, 004, and 005 consisting of mine discharge and sediment ponds.	10/31/2012
PSD Permit(s) (Air)	DAQE-694-95	Issued 8/9/95, includes Trail Mtn Mine	None
	DAQE-835-91	Issued 12/16/91, includes WRS	None
Other			

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and under the approved plan that must be periodically submitted to the Division. Specify whether the information is included as Appendix A to this report or currently on file with the Division.

Certified Reports:	Required Yes	Required No	Included or DOGM file location Included	Vol, Chapter, Page	Comments
Excess Spoil Piles	☐	☐	☐		
Refuse Piles	☒	☐	☒		DOGM receives these reports quarterly. Refer to Appendix A
Impoundments	☒	☐	☒		DOGM receives these reports quarterly. Refer to Appendix A
Other					
	☐	☐	☐		
	☐	☐	☐		

COMMITMENTS AND CONDITIONS

The Permittee is responsible for ensuring annual technical commitments in the MRP and conditions accepted with the permit are completed throughout the year.

REPORTING OF OTHER TECHNICAL DATA

List other technical data and information as required under the approved plan, which must be periodically submitted to the Division. Specify whether the information is included as Appendix B to this report or currently on file with the Division.

-The annual Vegetation Monitoring Report is included in Appendix B-

*Reminder: If equipment has been abandoned during 2007, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there were any hazardous or toxic materials and any revision to the PHC as necessary.

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Change in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is Requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the annual report. Please provide the Department of Commerce, Annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other change as necessary regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include certified financial statements, audits or worksheets, which may be required to meet bonding requirements. Specify whether the information is currently on file with the Division or included as Appendix C to the report.

Legal / Financial Update	Required Yes	Required No	Included or Included	DOGM File location Vol, Chapter, Page	Comments
Department of Commerce, Annual Report Officers	☐	☒	☒	☒ Legal/Financial Volume	Amendment pending approval. See Appendix C

Other					
	☐	☐	☐	☐	

MINE MAPS

Copies of mine maps, current and up-to-date through at least December 31, 2007, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.240. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential. Please provide a CD.

Map Number(s)	Map Title/ Description	Confidential Yes	Confidential No
Mine Workings Map	See previous annual reports (mine is currently in cessation)	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

OTHER INFORMATION

Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.

Additional attachment to this report? **Yes** ☒ **No** ☐

Annual Raptor Survey Report (Confidential Report, submitted separately)
Subsidence Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)
Hydrology Report (Reported for Cottonwood/Wilberg, Des Bee Dove, Deer Creek, and Trail Mountain mines)

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/019	Report Date	MARCH 30, 2007
Mine Name	Cottonwood/Wilberg		
Company Name	PacifiCorp		
Impoundment Name...	North Pond	South Pond	Waste Rock Pond
Impoundment Number.			
UPDES Permit Number		UT 0022896-003A	UT 0022896-005
MSHA ID NUMBER.....	1211-UT-09-02052-02	1211-UT-09-02052-03	

IMPOUNDMENT INSPECTION

Inspection Date	MARCH 30, 2007
Inspected By	Rick Cullum/ John Christensen
	1ST Quarter Inspection 2007

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

North Pond: No instabilities or weaknesses observed.

South Pond: No instabilities or weaknesses observed.

Waste Rock Site Pond: No instabilities observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

Pond	North Pond	South Pond	Waste Rock
60% Design Storage Capacity	.34 A.F. at 7351.0 ft.	.19 A.F. at 7322.3 ft.	1.45 A.F. at 6761.5 ft.
100% Sediment Capacity	.56 A.F. at 7354.83 ft.	.32 A.F. at 7325.33 ft.	2.42 A.F. at 6765.3 ft.

Principle and emergency spillway elevations.

	North Pond	South Pond	Waste Rock Pond
Principal Spillway Elevation	7354.83	7325.33	6766.3
Emergency Spillway Elevation	7363.33	7334.2	6770.0

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/019	Report Date	June 26, 2007
Mine Name	Cottonwood/Wilberg		
Company Name	PacifiCorp		
Impoundment Name...	North Pond	South Pond	Waste Rock Pond
Impoundment Number.			
UPDES Permit Number		UT 0022896-003A	UT 0022896-005
MSHA ID NUMBER.....	1211-UT-09-02052-02	1211-UT-09-02052-03	

IMPOUNDMENT INSPECTION

Inspection Date	June 18, 2007
Inspected By	Rick Cullum/ John Christensen
	2nd Quarter Inspection 2007

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

North Pond: No instabilities or weaknesses observed.

South Pond: No instabilities or weaknesses observed.

Waste Rock Site Pond: No instabilities observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

Pond	North Pond	South Pond	Waste Rock
60% Design Storage Capacity	.34 A.F. at 7351.0 ft.	.19 A.F. at 7322.3 ft.	1.45 A.F. at 6761.5 ft.
100% Sediment Capacity	.56 A.F. at 7354.83 ft.	.32 A.F. at 7325.33 ft.	2.42 A.F. at 6765.3 ft.

Principle and emergency spillway elevations.

	North Pond	South Pond	Waste Rock Pond
Principal Spillway Elevation	7354.83	7325.33	6766.3
Emergency Spillway Elevation	7363.33	7334.2	6770.0

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2
	Elevation	

Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

	North Pond	South Pond	Waste Rock Pond
Water Elevation	7347.25 Small amount From rain	small amount From rain	DRY
Discharging	NO	NO	No
Inlet/Outlet Condition	Good	Good	Good
Slope conditions	Good	Good	Good

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly for monitoring information.

Field Evaluation. Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

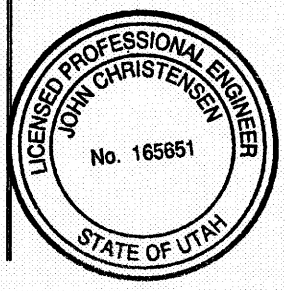
	North Pond	South Pond	Waste Rock Pond
Sediment Volume	0.10 AF	0.00 AF	1.19 AF
Remaining Sediment Storage Capacity	0.24 AF	0.19 AF	.26 AF
Water Impounded	0.0 AF	0.0 AF	0.12 AF

Changes, Comments,

The repairs to the North and South Ponds were completed in April and May 2007. During the repairs the remaining sediment was cleaned and hauled to the waste rock site.

THE COTTONWOOD MINE WAS IDLED IN 2001, SO THE ONLY WATER THAT REPORTS TO THE PONDS are RUN-OFF DURING A STORM EVENT.

Qualification Statement



I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: _____ **Date:** 10/31/07

Signature: Richard Cullum **Date:** 10-31-07

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT			Page 1 of 2
Permit Number	ACT/015/019	Report Date	Dec 21, 2007
Mine Name	Cottonwood/Wilberg		
Company Name	PacifiCorp		
Impoundment Name...	North Pond	South Pond	Waste Rock Pond
Impoundment Number.			
UPDES Permit Number		UT 0022896-003A	UT 0022896-005
MSHA ID NUMBER.....	1211-UT-09-02052-02	1211-UT-09-02052-03	

IMPOUNDMENT INSPECTION

Inspection Date	Dec. 10, 2007	
Inspected By	Rick Cullum/ John Christensen	
		4th Quarter Inspection 2007

1. Describe any appearance of any instability, structural weakness, or any other hazardous condition.

North Pond: No instabilities or weaknesses observed.

South Pond: No instabilities or weaknesses observed.

Waste Rock Site Pond: No instabilities observed.

Required for an impoundment which functions as a SEDIMENTATION POND.

Sediment storage capacity, including elevation of 60% and 100% sediment storage volumes, and, estimated average elevation of existing sediment.

Pond	North Pond	South Pond	Waste Rock
60% Design Storage Capacity	.34 A.F. at 7351.0 ft.	.19 A.F. at 7322.3 ft.	1.45 A.F. at 6761.5 ft.
100% Sediment Capacity	.56 A.F. at 7354.83 ft.	.32 A.F. at 7325.33 ft.	2.42 A.F. at 6765.3 ft.

Principle and emergency spillway elevations.

	North Pond	South Pond	Waste Rock Pond
Principal Spillway Elevation	7354.83	7325.33	6766.3
Emergency Spillway	7363.33	7334.2	6770.0

IMPOUNDMENT INSPECTION AND CERTIFIED REPORT		Page 1 of 2
Elevation		

Field Information. Provide current water elevation, whether pond is discharging, type and number of samples taken, monitoring/instrumentation information, inlet/outlet conditions, or other related activities associated with the pond including but not limited to sediment cleanout, pond decanting, embankment erosion/repairs, monitoring information, vegetation on outslopes of embankments, etc.

	North Pond	South Pond	Waste Rock Pond
Water Elevation	DRY 7" SNOW	DRY 7" SNOW	DRY 7" SNOW
Discharging	NO	NO	No
Inlet/Outlet Condition	Good	Good	Good
Slope conditions	Good	Good	Good

*See "Hydrologic Monitoring Data" report submitted to DOGM quarterly for monitoring information.

Field Evaluation. Describe any changes in the geometry of the impounding structure, average and maximum depths and elevations of impounded water, estimated sediment or slurry volume and remaining storage capacity, estimated volume of water impounded, and any other aspect of the impounding structure affecting its stability or function which has occurred during the reporting period.

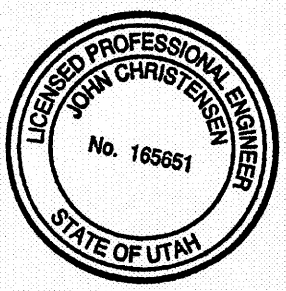
	North Pond	South Pond	Waste Rock Pond
Sediment Volume	0.10 AF	0.00 AF	1.19 AF
Remaining Sediment Storage Capacity	0.24 AF	0.19 AF	.26 AF
Water Impounded	0.0 AF	0.0 AF	0.12 AF

Changes, Comments,

The repairs to the North and South Ponds were completed in April and May 2007. During the repairs the remaining sediment was cleaned and hauled to the waste rock site.

THE COTTONWOOD MINE WAS IDLED IN 2001, SO THE ONLY WATER THAT REPORTS TO THE PONDS are RUN-OFF DURING A STORM EVENT.

Qualification Statement



I hereby certify that; I am experienced in the construction of impoundments; I am qualified and authorized under the direction of a Registered Professional Engineer to inspect the condition and appearance of impoundments in accordance with the certified and approved designs for this structure; that the impoundment has been maintained in accordance with approved design and meet or exceed the minimum design requirements under all applicable federal, state and local regulations; and, that inspections and inspection reports are made by myself and include any appearances of instability, structural weakness or other hazardous conditions of the structure affecting stability.

Signature: John Christensen **Date:** 1/10/08

Signature: Richard Cullen **Date:**

APPENDIX B

Reporting of Technical Data

Including monitoring data, reports, maps, and other information
As required under the approved plan or as required by the Division

In accordance with the requirement of R645-310-130 and R645-301-140

CONTENTS

MT NEBO SCIENTIFIC, INC.
research & consulting

March 17, 2008

Dennis Oakley
Energy West Mining Company
P.O. Box 310
15 North Main Street
Huntington, Utah 84528

Dear Mr. Oakley:

Enclosed please find three (3) hard copies (1 bound, 2 unbound) and a CD with electronic files of the following vegetation monitoring reports:

VEGETATION MONITORING
FOR PHASE III BOND RELEASE: YEAR 1
AT THE
COTTONWOOD FAN PORTAL AREA
2007

REVEGETATION MONITORING
DES-BEE-DOVE MINE SITE
YEAR FOUR
2007

VEGETATION MONITORING:
REFERENCE AREAS
2007

Please call or write if you have questions or comments. Your business is much appreciated.

Sincerely,

(Transmitted Electronically)

Patrick Collins, Ph.D.
Biologist/Environmental Consultant

Enclosures

330 East 400 South, Ste. 6, P.O. Box 337, Springville, Utah 84663
(801) 489-6937, (fax) 489-6779

COTTONWOOD MINE SITE

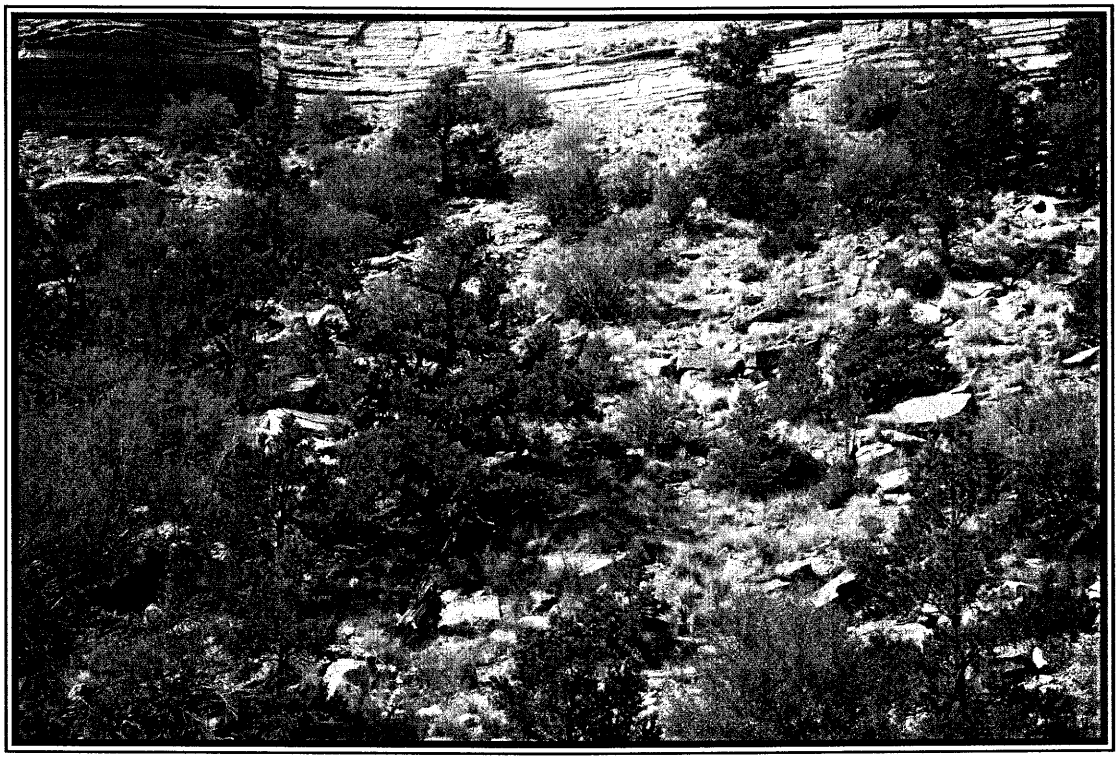
Pinyon-Juniper Reference Area

Table 7: Cover and frequency by plant species at the Cottonwood Mine site.

PINYON-JUNIPER REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Pseudotsuga menziesii	1.00	4.36	5.00
UNDERSTORY			
SHRUBS			
Abies concolor	0.35	1.53	5.00
Amelanchier utahensis	3.50	7.09	20.00
Artemisia tridentata	1.00	3.00	10.00
Chrysothamnus nauseosus	0.85	2.59	10.00
Ephedra viridis	0.50	2.18	5.00
Eriogonum corymbosum	1.25	4.44	10.00
Gutierrezia sarothrae	0.40	1.74	5.00
Juniperus osteosperma	1.25	5.45	5.00
Pinus edulis	3.00	7.65	15.00
Pseudotsuga menziesii	0.50	2.18	5.00
FORBS			
Hedysarum occidentalis canone	0.50	2.18	5.00
GRASSES			
Elymus salinus	18.00	8.12	95.00
Stipa hymenoides	2.90	5.22	25.00

Table 8: Total cover and composition at the at the Cottonwood Mine site.

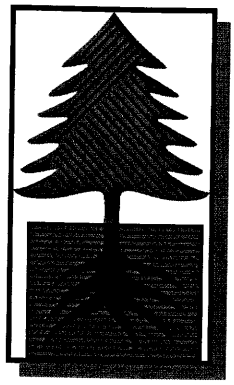
PINYON-JUNIPER REFERENCE AREA COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	1.00	4.36
Understory Living Cover (u)	34.00	5.61
Litter	10.25	3.70
Bareground	14.00	7.18
Rock	41.75	11.54
o + u	35.00	6.52
% COMPOSITION		
Shrubs	35.62	24.88
Forbs	2.00	8.72
Grasses	62.38	23.51



Cottonwood Mine Site: Pinyon-Juniper Reference Area

VEGETATION MONITORING FOR PHASE III BOND RELEASE: YEAR 1 AT THE COTTONWOOD FAN PORTAL AREA 2007

RECLAIMED SLOPE '81 RECLAIMED SLOPE '98 AND THE PINYON-JUNIPER REFERENCE AREA



Prepared by

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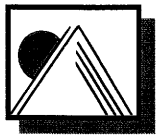
Patrick D. Collins, Ph.D.

for

ENERGY WEST MINING COMPANY
P.O. Box 310
Huntington, Utah 84528



March 2008

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VEGETATION MONITORING
FOR PHASE III BOND RELEASE: YEAR 1
AT THE
COTTONWOOD FAN PORTAL AREA
2007

INTRODUCTION

Following final reclamation and revegetation of a mine site, a "*responsibility period*" for at least 10 years is required before the mine operator can submit a request for *Final or Phase III Bond Release* through the State of Utah, Division of Oil, Gas & Mining (DOGM). This period of time is thought to be long enough to determine whether or not adequate re-establishment of the reclaimed plant community has occurred on the site. The vegetation is usually monitored throughout this time period, but beginning at year 9 of the 10-year period, intensive sampling can be initiated for two consecutive years to determine whether or not the reclaimed site has met pre-determined revegetation success standards. The re-established vegetation of the reclaimed land must meet specific state and federal requirements as specified by the State of Utah, Division of Oil, Gas & Mining. As dictated by the rules, vegetative cover must be "*diverse, effective and permanent*". Accordingly, there are often specific requirements associated with cover, density, production and diversity of reclaimed lands. Success standards for two reclaimed slopes within the Cottonwood Fan Portal Area, the **Reclaimed Slope '81** and the **Reclaimed Slope '98**, had pre-determined specific parameters to be compared from a native, undisturbed plant community located nearby called the **Pinyon-Juniper Reference Area**.

The purpose of this document was to compare results of the quantitative data and indices formulated from it, of the reclaimed slopes to that of the reference area. The contents of this report provide **Year 1** results of the two consecutive years of sampling required prior to submittal of an application for Phase III Bond Release by the mine operator through DOGM.

General Site Description

The Cottonwood Fan Portal Area is located in Cottonwood Canyon, approximately 12 miles northwest of Orangeville, Utah. Elevation of the study sites ranged between 7,100 ft and 7,600 ft above sea level. Slopes of the study areas were relatively steep at approximately 35 degrees with exposures primarily to the west-southwest.

The descriptive name provided for the "Reclaimed Slope '81" implies the slope's general history – it is a reclaimed slope where the plant communities that once existed in the area were disturbed by previous mining activities, then were reclaimed and re-seeded in 1981.

Prior to disturbance, the native vegetation was most likely dominated by pinyon pine (*Pinus edulis*) and Utah juniper (*Juniperus osterosperma*), with Salina wildrye (*Elymus salinus*) as the dominant understory species.

Similarly named, the "Reclaimed Slope '98" was also the site of previous disturbance and was reclaimed and re-seeded in 1998. With similar slopes and exposures as the Reclaimed Slope '81,

this area was also likely dominated by the same plant species before it was disturbed by mining activities.

A Pinyon-Juniper Reference Area was chosen earlier to be used to create standards for revegetation success following final reclamation. The reference area was dominated by the same plant species as those listed above for the reclaimed slopes (before they were disturbed). The reference area was chosen earlier to comply with guidelines provided by the State of Utah, Division of Oil, Gas & Mining (DOGM) and was thought to have similar slopes, soils, exposure, species composition, precipitation, elevation and other environmental variables.

METHODS

Vegetation establishment on the reclaimed slopes has been monitored for several years following slope reclamation. Sampling methods have remained consistent for all monitoring years and follow those methods suggested in guidelines provided by DOGM.

Transect Placement

Transect lines for quantitative sampling were randomly placed the length of the reclaimed slopes and reference areas to adequately represent each sample area as a whole. From these transect lines, sample locations were chosen using random numbers at right angles to them.

Cover, Frequency and Composition

Cover estimates were made using ocular methods with meter square quadrats. Species composition and relative frequencies were also assessed from the quadrats. Additional information recorded on the raw data sheets were: estimated precipitation, slope, exposure, grazing use, animal disturbance and other appropriate notes. Plant nomenclature follows "A Utah Flora" (Welsh et al. 2003).

Density

Density estimates for the woody plant species on the reclaimed slopes and reference area were made using a distance method called the point-quarter method. In this method, random points were placed on the sample sites and measured into four quarters. The distances to the nearest woody plant species were then recorded in each quarter. The average point-to-individual distance was equal to the square root of the mean area per individual.

Production

Total annual biomass production was estimated by clipping, drying and weighing current annual growth in each sample quadrat. "Double sampling" methods were employed by placing four additional quadrats around the clipped quadrat, then estimating the production of them relative to the clipped plot. Herbaceous and woody species production were recorded separately.

Sample Adequacy

Sample adequacy for cover and density was attempted with the goal that 90% of the samples were within 10% of the true mean for the plant communities in the area. The following formula was used:

$$nMIN = \frac{t^2 s^2}{(dx)^2}$$

where,

nMIN	= minimum adequate sample
t	= appropriate confidence t-value
s	= standard deviation
x	= sample mean
d	= desired change from mean

Diversity

Two diversity indices have been reported in this document for the reclaimed area and the reference area. To begin, **MacArthur's Diversity Index** was calculated. This index is an effective diversity measurement and is computed using the equation $1/\sum pi^2$ (MacArthur and Wilson 1976, *The Theory of Island Biogeography,* Princeton: Princeton University Press). In this equation *pi* is the proportion of sum frequency contributed by the *i*th species in the sample area of concern. The proportional contribution of each species is then squared and the values for all species in the sample areas are summed. This index integrates the number of species and the degree to which frequency of occurrence was equitably distributed among those species. In other

words, this index provides greater weight to those species that are present more often (with greater frequency) than those that are merely "present" in one or two quadrats. The **average number of species** per sample quadrat is another measure of species diversity provided from the data in this report.

Photographs

Color photographs were taken of the sample areas and are included in this report.

RESULTS

Reclaimed Slope '81

Quantitative sampling the vegetation on the Reclaimed Slope '81 showed that the area was dominated by sagebrush (*Artemisia tridentata*), Great Basin wildrye (*Elymus cinereus*), fourwing saltbush (*Atriplex canescens*) and rubber rabbitbrush (*Chrysothamnus nauseosus*). For a list of all plant species present in sample quadrats along with the cover and frequency values, refer to Table 1.

The total living cover of this reclaimed slope was estimated at 48.30% (Table 2-A). Of that living cover, shrubs comprised 60.45% of it, grasses 31.44% and forbs 8.10% (Table 2-B). The total woody species density was estimated at 4,360 individuals per acre and was dominated by

sagebrush, rubber rabbitbrush and fourwing saltbush (Table 3). Total annual biomass production of the slope was estimated to be 1,395 pounds per acre, with 799 pounds coming from herbaceous species and 596 pounds from woody plants (Table 4).

Reclaimed Slope '98

The Reclaimed Slope '98 was dominated by Gt. Basin wildrye, Pacific aster (*Aster ascendens*), western wheatgrass (*Elymus smithii*) and Lewis flax (*Linum perenne* ssp. *lewisii*). For a list of all plant species present in sample quadrats along with their cover and frequency values, refer to Table 5.

The total living cover for this reclaimed slope was estimated to be 45.25% (Table 6-A). The composition of the cover by lifeform was 55.89% grasses, 25.18% forbs and 18.93% grasses (Table 6-B). Woody species density in this area consisted of 2,888 individuals per acre with the dominants for this parameter consisting of fourwing saltbush, rubber rabbitbrush sagebrush (Table 7). Productivity for the slope estimated at 1373 pounds per acre with 1035 pounds coming from herbaceous and 338 pounds from woody species (Table 8).

Pinyon-Juniper Reference Area

The reference area chosen earlier to be used for final revegetation success standard was located up-slope from the two reclaimed slopes in an undisturbed pinyon-juniper plant community. This

community was also sampled during the same period to enable the results to be compared to the results of the reclaimed slopes.

Overstory cover of the reference area was estimated at 4.08%, all from pinyon pine *(Pinus edulis)*. The understory living cover was dominated by Salina wildrye, rubber rabbitbrush, pinyon pine, Utah juniper (*Juniperus osteosperma*) and Mormon tea (*Ephedra viridis*). For a cover and frequency listing of all species present in the sample quadrats refer to Table 9.

The total living cover of the Pinyon-Juniper Reference Area was estimated at 33.67%, of which 29.58% was from understory cover and 4.08% from overstory (Table 10-A). The composition of this cover consisted of 60.37% grasses, 34.26% shrubs and 5.37% forbs (Table 10-B). Woody species density of this area consisted of 895 individuals per acre with the most common plants for this parameter consisting of pinyon-pine, rubber rabbitbrush, Mormon tea, Utah serviceberry (*Amelanchier utahensis*) and Utah juniper (Table 11). Total annual biomass production was estimated at 449 pounds per acre and was about equally represented by woody and herbaceous plants (Table 12).

Comparisons Between Areas

Statistical tests on the mean living covers, densities and productivity measurements were employed to compare the reclaimed slopes with the reference area. Additionally, diversity indices of all areas were also calculated so that comparisons of these parameters could also be

made.

Reclaimed Slope '81 *vs.* the P-J Reference Area

When a Student's t-test analysis was employed to compare the mean total living **cover** of the Reclaimed Slope '81 with the Pinyon-Juniper Reference Area, the test suggested that the reclaimed slope was significantly greater than the reference area (Table 13-A). Moreover, when woody species **density** of the two areas were compared by the same statistical analysis, results here also suggested that the number of woody plants per acre for reclaimed slope was greater than that of the reference area. Next, the mean total annual biomass **production** of the two areas were compared and results were consistent – the reclaimed slope had more the 3 times the production of the reference area. This difference was, of course, statistically significant. Finally, two **diversity** indices, *MacArthur's Index* and the *Average Number of Species per Quadrat* of the two areas were compared. The MacArthur's Index of the two areas were very similar (the reference area index was slightly higher); the Average Number of Species per Quadrat was greater for the reclaimed slope (Table 14).

Reclaimed Slope '98 *vs.* the P-J Reference Area

When the total living **cover** of the Reclaimed Slope '98 was compared with the cover of the Pinyon-Juniper Reference Area, Student's t-test suggested that the difference was significant – or the total living cover of the reclaimed slope was significantly greater than the reference area

(Table 13-B). Woody species **density** was also compared of these two areas with the same results – the density of the reclaimed slope was greater. **Production** of the Reclaimed Slope '98 was also significantly greater than the Pinyon-Juniper Reference Area according to a t-test. Finally, when **diversity** indices were compared between the reclaimed slope and reference area, both diversity indices used were greater for the reclaimed slope (Table 14).

DISCUSSION & SUMMARY

Quantitative sampling was conducted in three different plant communities at the Cottonwood Fan Portal Area in Cottonwood Canyon, Emery County, Utah. The sampling was conducted to provide Year 1 of two consecutive sample years required prior to submittal of an application for Phase III Bond Release of the reclaimed areas. The reclaimed areas studied were the Reclaimed Slope '81 and Reclaimed Slope '98. The data from these re-established plant communities have been compared to a Pinyon-Juniper Reference Area, or an area chosen previously to be used to provide revegetation success standards following final reclamation.

Statistical comparison and other indices suggest that the reclaimed areas in the Cottonwood Fan Portal Area have met or exceeded those standards that were pre-determined to be used at the time of final reclamation. The parameters of the reclaimed area that were compared statistically with the reference area were: total living cover, woody species density and annual biomass production. Other parameters that can be compared by a review of the summary tables include: cover by individual plant species and lifeform composition. Finally, diversity of the reclaimed slopes was greater (or nearly equal to) than that of the reference area.

DATA SUMMARY TABLES

Reclaimed Slope '81

Table 1: Cover and frequency by plant species at the Cottonwood Fan Portal area.

RECLAIMED SLOPE '81	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Artemisia tridentata	17.04	17.55	74.00
Atriplex canescens	6.60	15.73	22.00
Atriplex confertifolia	0.50	3.50	2.00
Chrysothamnus nauseosus	5.20	9.90	32.00
FORBS			
Aster foliaceus	3.60	7.42	24.00
GRASSES			
Bromus inermis	0.80	4.04	4.00
Elymus cinereus	8.46	13.39	42.00
Elymus junceus	4.10	6.71	32.00
Elymus lanceolatus	0.80	2.71	10.00
Elymus smithii	1.20	2.93	16.00

Table 2: Total cover and composition at the Cottonwood Fan Portal area.

RECLAIMED SLOPE ' 81		
A. COVER	MEAN	STD. DEV.
Total Living Cover	48.30	12.91
Litter	12.10	6.01
Bareground	15.50	7.16
Rock	24.10	11.43
B. % COMPOSITION		
Shrubs	60.45	27.35
Forbs	8.10	16.65
Grasses	31.44	24.90

Reclaimed Slope '81 (continued)

Table 3: Woody species density at the Cottonwood Fan Portal area.

RECLAIMED SLOPE '81	*No/Ac*
Artemisia tridentata	3124.74
Atriplex canescens	363.34
Atriplex confertifolia	54.50
Chrysothamnus nauseosus	817.52
TOTAL	**4360.10**

Table 4: Production at the Cottonwood Fan Portal area.

RECLAIMED SLOPE '81		
	Pounds/Acre	
LIFEFORM	MEAN	STD. DEV.
Herbaceous	798.60	596.68
Woody	596.29	551.34
TOTAL	**1394.89**	448.20

Reclaimed Slope '98

Table 5: Cover and frequency by plant species at the Cottonwood Fan Portal area.

RECLAIMED SLOPE '98			
	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Artemisia nova	0.13	1.02	1.67
Artemisia tridentata	2.25	6.35	15.00
Atriplex canescens	3.58	8.32	26.67
Atriplex confertifolia	0.75	4.06	3.33
Chrysothamnus nauseosus	1.72	4.85	13.33
FORBS			
Achillea millefolium	0.17	1.28	1.67
Aster ascendens	5.83	6.05	60.00
Linus perenne ssp. lewisii	4.40	4.98	53.33
Penstemon palmeri	0.70	2.40	10.00
GRASSES			
Bromus carinatus	0.33	1.55	5.00
Elymus cinereus	13.22	13.51	66.67
Elymus lanceolatus	2.83	5.58	25.00
Elymus salinus	1.25	4.34	8.33
Elymus smithii	5.00	7.07	41.67
Elymus spicatus	1.67	5.22	11.67
Hilaria jamesii	0.08	0.64	1.67
Poa pratensis	0.17	1.28	1.67
Stipa hymenoides	1.17	5.80	5.00

Table 6: Total cover and composition at the Cottonwood Fan Portal area.

RECLAIMED SLOPE '98		
A. COVER	MEAN	STD. DEV.
Total Living Cover	45.25	11.49
Litter	10.33	3.97
Bareground	20.50	8.45
Rock	23.92	11.18
B. % COMPOSITION		
Shrubs	18.93	25.29
Forbs	25.18	19.31
Grasses	55.89	24.12

Reclaimed Slope '98 (continued)

Table 7: Woody species density at the Cottonwood Fan Portal area.

RECLAIMED SLOPE '98	*No/Ac*
Amelanchier utahensis	10.32
Artemisia nova	185.67
Artemisia tridentata	546.70
Atriplex canescens	1371.90
Atriplex confertifolia	30.95
Cercocarpus ledifolius	10.32
Chrysothamnus nauseosus	660.16
Eriogonum corymbosum	10.32
Rhus aromatica	10.32
Rosa woodsii	30.95
Salix exigua	10.32
Symphoricarpos oreophilus	10.32
TOTAL	**2888.20**

Table 8: Production at the Cottonwood Fan Portal area.

RECLAIMED SLOPE '98		
	Pounds/Acre	
LIFEFORM	MEAN	STD. DEV.
Herbaceous	1035.33	620.59
Woody	337.62	524.27
TOTAL	**1372.95**	615.37

Pinyon-Juniper Reference Area

Table 9: Cover and frequency by plant species at the Cottonwood Fan Portal area.

PINYON-JUNIPER REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
Pinus edulis	4.08	9.81	16.67
UNDERSTORY			
SHRUBS			
Amelanchier utahensis	0.50	2.69	5.00
Atriplex confertifolia	1.08	4.19	6.67
Chrysothamnus nauseosus	2.17	7.55	10.00
Ephedra viridis	1.58	5.51	10.00
Juniperus osteosperma	1.58	5.51	8.33
Mahonia repens	1.30	4.85	10.00
Pinus edulis	2.00	5.10	16.67
FORBS			
Cryptantha sp.	0.58	1.61	11.67
Descurainia pinnata	0.25	1.09	5.00
Stanleya pinnata	0.62	2.33	8.33
GRASSES			
Elymus salinus	16.25	12.06	53.33
Stipa hymenoides	1.67	4.35	13.33

Table 10: Total cover and composition at the Cottonwood Fan Portal area.

PINYON-JUNIPER REFERENCE AREA		
A. COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	4.08	9.81
Understory Living Cover (u)	29.58	8.48
Litter	22.33	12.50
Bareground	14.75	8.96
Rock	33.33	12.67
o + u	33.67	8.84
B. % COMPOSITION		
Shrubs	34.26	37.90
Forbs	5.37	11.25
Grasses	60.37	35.89

Pinyon-Juniper Reference Area (continued)

Table 11: Woody species density at the Cottonwood Fan Portal area.

PINYON-JUNIPER REFERENCE AREA	
	No/Ac
Amelanchier utahensis	82.00
Atriplex canescens	3.73
Atriplex confertifolia	44.73
Cercocarpus montanus	14.91
Chrysothamnus nauseosus	149.09
Ephedra viridis	126.73
Eriogonum corymbosum	22.36
Juniperus osteosperma	82.00
Pied Pinus edulis	365.28
Pseudotsuga menziesii	3.73
TOTAL	**894.56**

Table 12: Production at the Cottonwood Fan Portal area.

PINYON-JUNIPER REFERENCE AREA		
	Pounds/Acre	
LIFEFORM	MEAN	STD. DEV.
Herbaceous	237.16	148.89
Woody	212.01	291.75
TOTAL	**449.16**	232.97

TABLE 13: Statistical summary sheet for the reclaimed slopes and reference areas at the Cottonwood Fan Portal Area (2007).

A.				
RECLAIMED '81 SLOPE				
Total Living Cover	$\bar{x}$=48.30	s=12.91	n=50	nMIN=19.33
Density	$\bar{x}$=4360.10	s=1952.10	n=60	nMIN=54.24
Production	$\bar{x}$=1394.89	s=448.20	n=100	nMIN=27.94
P-J REFERENCE AREA				
Total Living Cover	$\bar{x}$=33.67	s=8.84	n=60	nMIN=18.65
Density	$\bar{x}$=894.56	s=248.06	n=60	nMIN=20.81
Production	$\bar{x}$=449.16	s=232.97	n=60	nMIN=72.80
STATISTICAL ANALYSES				
Total Living Cover	t=7.024	df=108	SL=p<.001	
Density	t=13.642	df=118	SL=p<.001	
Production	t=15.150	df=158	SL=p<.001	
B.				
RECLAIMED '98 SLOPE				
Total Living Cover	$\bar{x}$=45.25	s=11.49	n=60	nMIN=17.45
Density	$\bar{x}$=2888.20	s=1062.81	n=70	nMIN=36.64
Production	$\bar{x}$=1372.95	s=615.37	n=100	nMIN=54.36
P-J REFERENCE AREA				
Total Living Cover	$\bar{x}$=33.67	s=8.84	n=60	nMIN=18.65
Density	$\bar{x}$=894.56	s=248.06	n=60	nMIN=20.81
Production	$\bar{x}$=449.16	s=232.97	n=60	nMIN=72.80
STATISTICAL ANALYSES				
Total Living Cover	t=6.187	df=118	SL=p<.001	
Density	t=14.195	df=128	SL=p<.001	
Production	t=11.147	df=158	SL=p<.001	

$\bar{x}$= sample mean, s = sample standard deviation, n = sample size,
nMIN= minimum adequate sample (@ 90% ± .10)
NS = non-significant, t = Student's t-value, df = degrees of freedom,
SL = significance level, p = probability level

TABLE 14: Diversity of the Cottonwood Fan Portal Area (2007).

A.
MacArthur's Index ($1/\sum pi^2$) =

_____Reclaimed Slope '81: 6.207

_____Reclaimed Slope '98: 8.389

_____P-J Reference Area: 6.316

B.
Average No. Species/Quadrat =

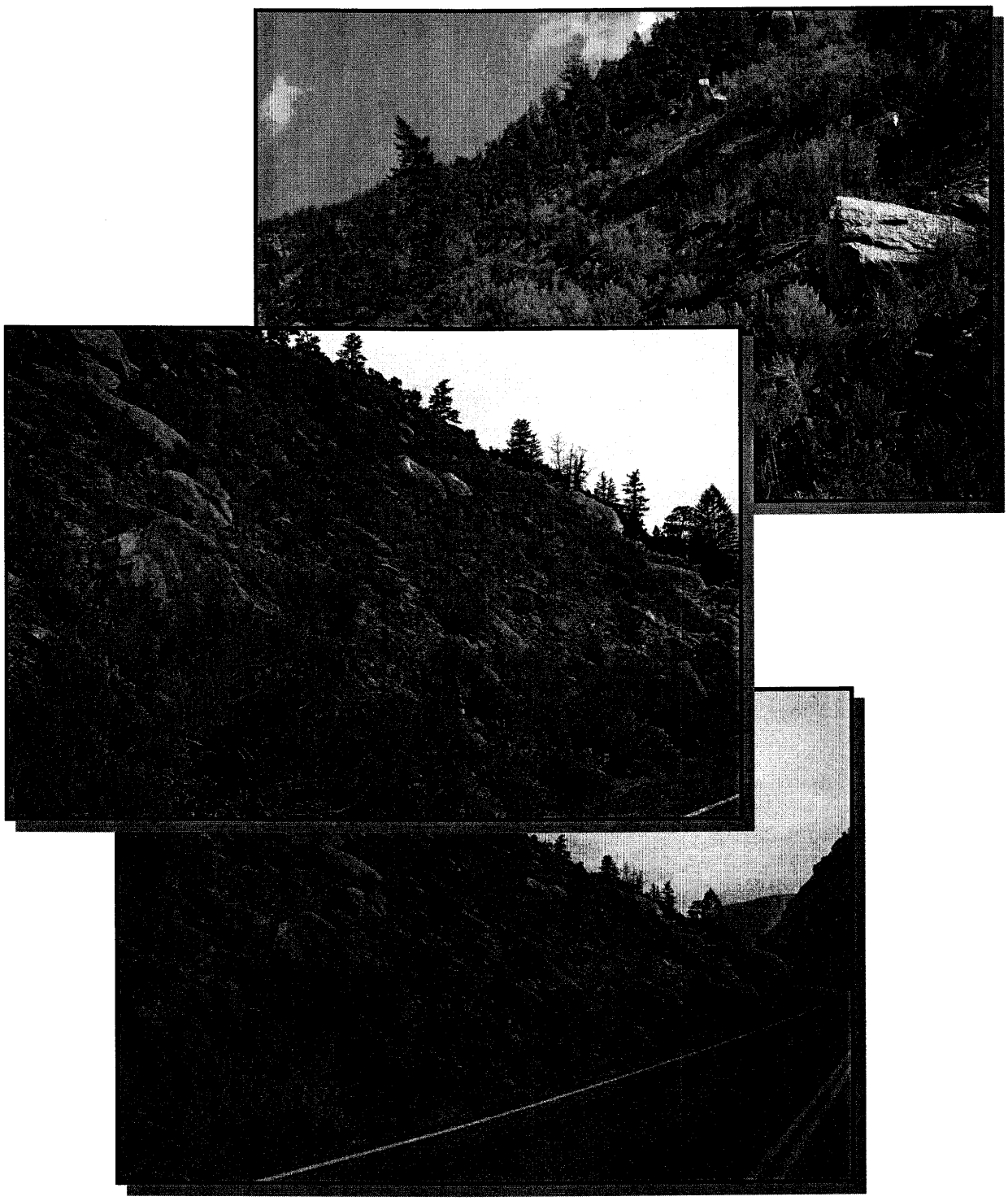
_____Reclaimed Slope '81: 2.58

_____Reclaimed Slope '98: 3.52

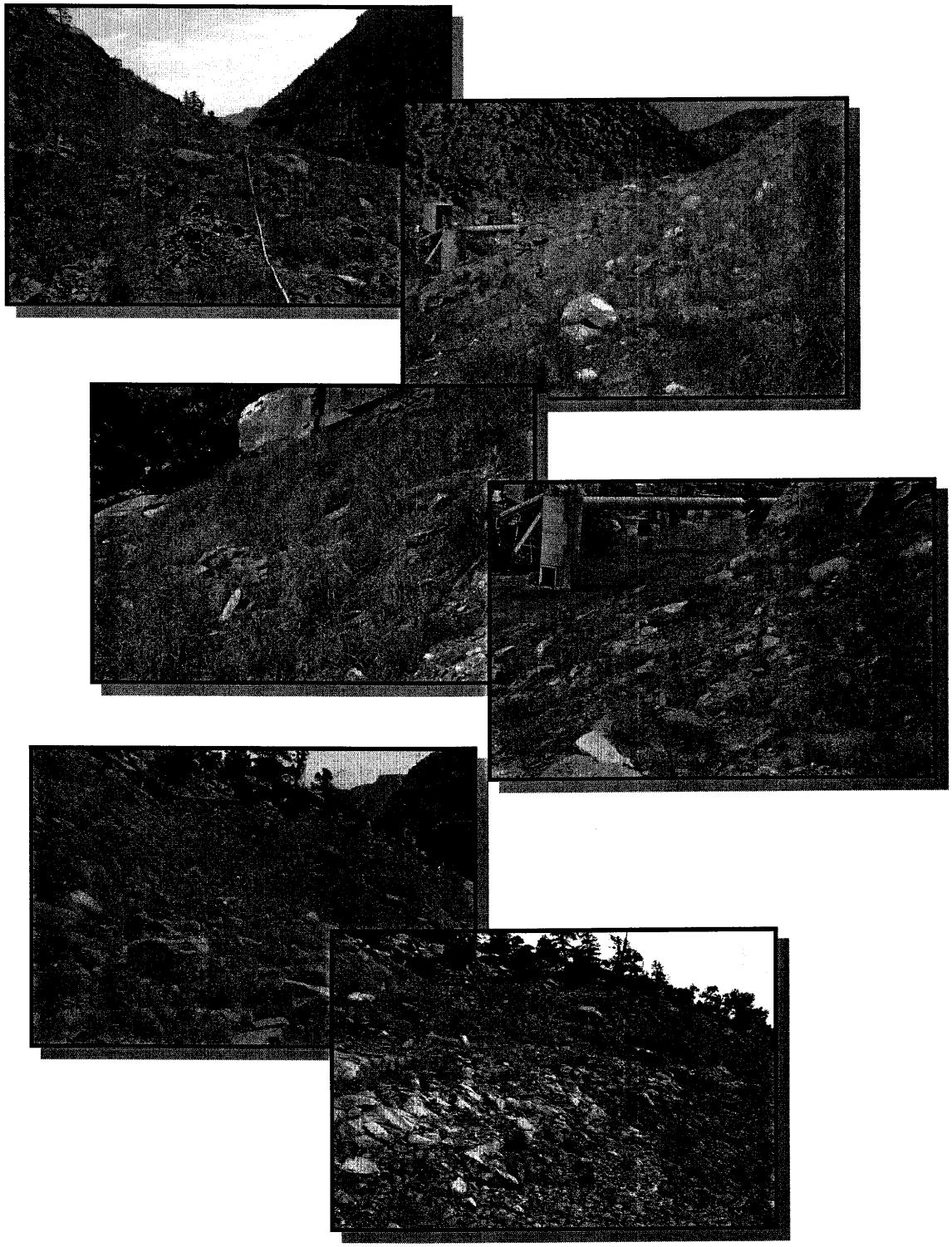
_____P-J Reference Area: 1.58

COLOR PHOTOGRAPHS
OF THE
SAMPLE AREAS

RECLAIMED SLOPE '81

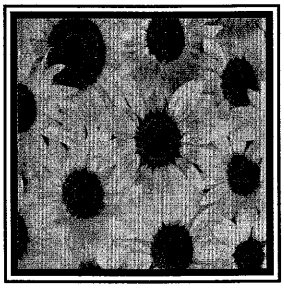


RECLAIMED SLOPE '98



PINYON-JUNIPER REFERENCE AREA

COTTONWOOD MINE NEW WASTE ROCK SITE



Black Sagebrush Reference Area

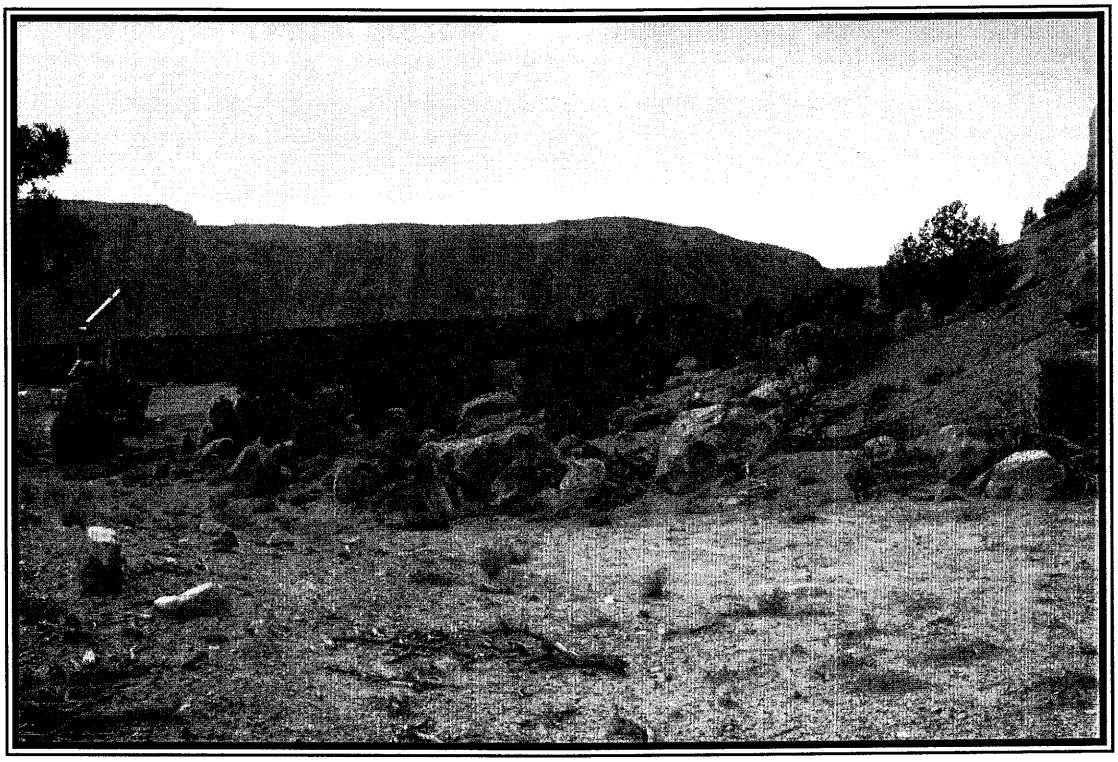
Table 1: Cover and frequency by plant species at the Cottonwood Mine New Waste Rock site.

BLACK SAGEBRUSH REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Pinus edulis	2.50	7.66	10.00
UNDERSTORY			
SHRUBS			
Artemisia nova	9.75	8.49	70.00
Cercocarpus montanus	0.60	2.62	5.00
Ephedra viridis	2.75	9.15	10.00
Juniperus osteosperma	2.25	5.80	20.00
Pinus edulis	3.25	6.38	20.00
FORBS			
GRASSES			
Elymus salinus	1.25	3.83	10.00

Table 2: Total cover and composition at the at the Cottonwood Mine New Waste Rock site.

BLACK SAGEBRUSH REFERENCE AREA

COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	2.50	7.66
Understory Living Cover (u)	19.85	9.92
Litter	15.65	8.83
Bareground	34.75	17.99
Rock	29.75	19.90
o + u	22.35	11.31
% COMPOSITION		
Shrubs	96.07	12.26
Forbs	0.00	0.00
Grasses	3.93	12.26



Cottonwood Mine New Waste Rock Site: Black Sagebrush Reference Area

Pinyon-Juniper Reference Area

Table 3: Cover and frequency by plant species at the Cottonwood Mine New Waste Rock site.

PINYON-JUNIPER REFERENCE AREA

	MEAN	STD. DEV.	FREQUENCY
OVERSTORY			
SHRUBS			
Juniperus osteosperma	1.50	6.54	5.00
Pinus edulis	6.00	12.10	20.00
UNDERSTORY			
SHRUBS			
Artemisia nova	2.00	6.20	10.00
Cercocarpus montanus	1.35	4.54	10.00
Ephedra viridis	6.75	10.52	35.00
Juniperus osteosperma	1.50	4.77	10.00
Pinus edulis	4.50	9.34	25.00
Yucca harrimaniae	2.00	4.30	20.00
FORBS			
Cryptantha sp.	0.05	0.22	5.00
GRASSES			

Table 4: Total cover and composition at the at the Cottonwood Mine New Waste Rock site

PINYON-JUNIPER REFERENCE AREA

COVER	MEAN	STD. DEV.
Overstory Living Cover (o)	7.50	13.09
Understory Living Cover (u)	18.15	12.01
Litter	23.45	10.61
Bareground	23.50	18.31
Rock	34.90	14.89
o + u	25.65	13.72
% COMPOSITION		
Shrubs	95.00	21.79
Forbs	5.00	21.79
Grasses	0.00	0.00

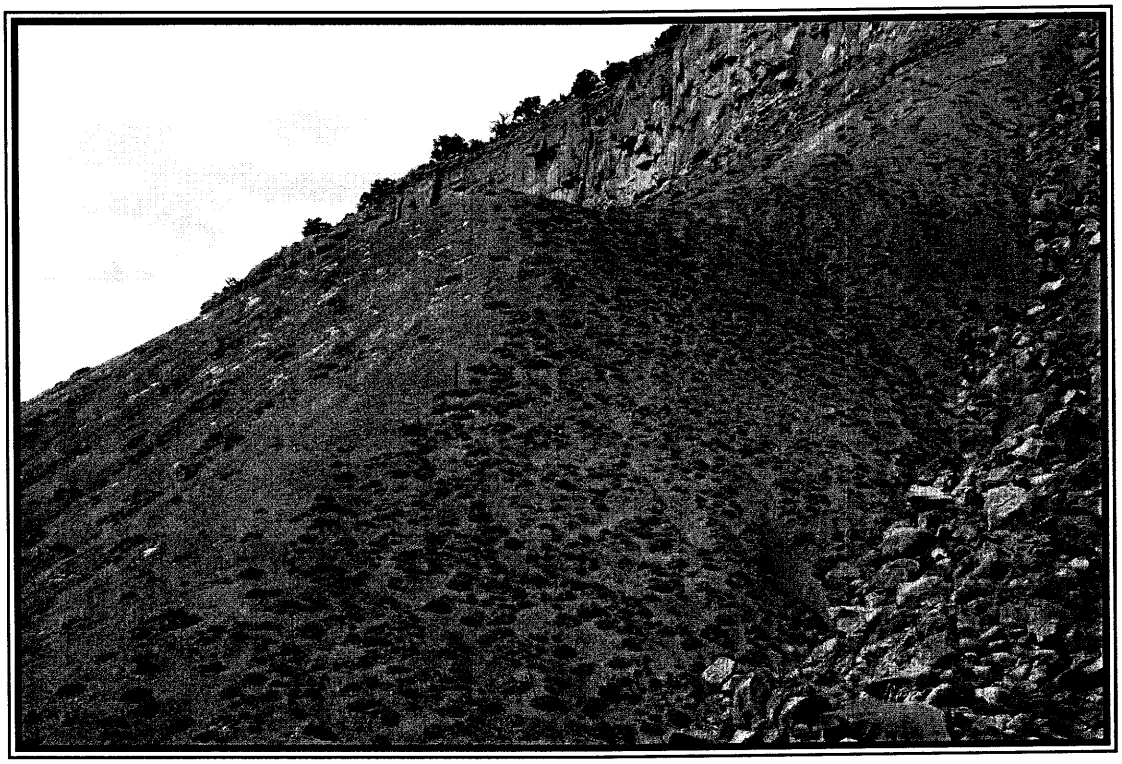
Cottonwood Mine New Waste Rock Site: Pinyon-Juniper Reference Area

Table 5: Cover and frequency by plant species at the Cottonwood Mine New Waste Rock site.

GARDNER SALTBRUSH REFERENCE AREA	MEAN	STD. DEV.	FREQUENCY
SHRUBS			
Atriplex confertifolia	2.50	5.59	20.00
Atriplex gardneri	16.50	13.88	70.00
Ephedra viridis	0.35	1.53	5.00
Gutierrezia sarothrae	0.25	1.09	5.00
FORBS			
GRASSES			
Elymus salinus	5.65	7.75	40.00

Table 6: Total cover and composition at the at the Cottonwood Mine New Waste Rock site.

GARDNER SALTBRUSH REFERENCE AREA		
COVER	MEAN	STD. DEV.
Total Living Cover	25.25	9.28
Litter	11.95	4.72
Bareground	43.40	20.03
Rock	19.40	16.02
% COMPOSITION		
Shrubs	77.92	29.28
Forbs	0.00	0.00
Grasses	22.08	29.28



Cottonwood Mine New Waste Rock Site: Gardner Saltbush Reference Area

Current Listing of Officers and Directors

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

BERKSHIRE HATHAWAY, INC. OFFICERS (as of March 26, 2008)			
Name	**Position**	**Address**	**Effective Date***
Warren E. Buffett	Chairman of the Board Chief Executive Officer	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Charles T. Munger	Vice Chairman of the Board of Directors	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Marc D. Hamburg	Vice President, Principal Financial Officer	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.			

BERKSHIRE HATHAWAY, INC. DIRECTORS (as of March 26, 2008)			
Name	**Position**	**Address**	**Effective Date***
Warren E. Buffett	Chairman of the Board Chief Executive Officer	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Charles T. Munger	Vice Chairman of the Board of Directors	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Howard G. Buffett	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Susan L. Decker	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	5/5/07
William H. Gates, III	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
David S. Gottesman	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Charlotte Guyman	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Donald R. Keough	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Thomas S. Murphy	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Ronald L. Olson	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Walter Scott, Jr.	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06

*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.

MIDAMERICAN ENERGY HOLDINGS COMPANY'S OFFICERS (as of April 18, 2008)			
Name	**Position**	**Address**	**Effective Date***
Gregory E. Abel	Chief Executive Officer and President and Chief Operating Officer	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	4/16/08
Douglas L. Anderson	Senior Vice President, General Counsel	1111 So. 103rd St. Omaha, NE 68214 (402) 231-1581	3/21/06
Patrick J. Goodman	Senior Vice President and Chief Financial Officer	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Brent E. Gale	Senior Vice President , Regulation and Legislation	825 NE Multnomah, Suite 2000 Portland, Oregon 97232 (503) 813-5000	3/21/06
Maureen E. Sammon	Senior Vice President and Chief Administrative Officer	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Cathy S. Woollums	Vice President Senior Vice President, Environmental Services and Chief Environmental Counsel	106 E. Second Street PO Box 4350 Davenport, Iowa 52808 (563)333-8009	3/21/06 2/12/07
John "Jack" Diesing, Jr.	Vice President, Corporate Insurance AON Risk Services	P.O. Box 3307 Omaha, Nebraska 68103-3307 (402) 697-1400	3/21/06
Steven R. Evans	Vice President Taxation	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Brian K. Hankel	Vice President and Treasurer	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Wayne F. Irmiter	Vice President and Controller	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Paul J. Leighton	Vice President Corporate Law, Assistant General Counsel & Assistant Corporate Secretary	4299 Northwest Urbandale Drive Urbandale, Iowa 50322-7916 (515) 281-2201	3/21/06
Jonathan M. Weisgall	Vice President Federal Regulation/IPP	1200 New Hampshire Ave. NW, Suite 300 Washington, DC 20036-6812 (202) 828-1378	3/21/06
Russell H. White	Vice President, General Services	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Mitchell L. Pirnie	Vice President and Chief Litigation Counsel	1111 So. 103rd St. Omaha, NE 68214 (402) 231-1527	2/12/07

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MIDAMERICAN ENERGY HOLDINGS COMPANY'S DIRECTORS (as of September 20, 2007)			
Name	**Position**	**Address**	**Effective Date**
Gregory E. Abel	Director	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Warren E. Buffett	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Marc D. Hamburg	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
Walter Scott, Jr.	Director	1440 Kiewit Plaza Omaha, Nebraska 68131	3/21/06
David L. Sokol	Director	1111 So. 103rd St. Omaha, NE 68214 (402) 231-1400	3/21/06
*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.			

PPW HOLDINGS LLC OFFICERS (as of December 1, 2006)			
Name	**Position**	**Address**	**Effective Date***
Gregory E. Abel	President	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	5/23/05
Steven R. Evans	Vice President Taxation	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	5/18/06
Brian K. Hankel	Vice President and Treasurer	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	5/23/05
Wayne F. Irmiter	Vice President and Controller	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	5/18/06
Mitchell F. Ludwin	Vice President and Secretary	302 South 36th Street Omaha, Nebraska 68131 (402) 231-1587	5/18/06
James C. Galt	Assistant Treasurer	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	5/18/06

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PACIFICORP'S OFFICERS (as of March 26, 2008)			
Name	**Position**	**Address**	**Effective Date***
Gregory E. Abel	Chairman of Board and Chief Executive Officer	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Dean S. Brockbank	Vice President and General Counsel, PacifiCorp Energy	1407 West North Temple Suite 320 Salt Lake City, Utah 84116 (801) 220-2000	8/30/07
Jeffery B. Erb	Assistant Secretary	825 NE Multnomah, Suite 600 Portland, Oregon 97232 (503) 813-5000	3/13/02
Natalie L. Hocken	Vice President and General Counsel, Pacific Power	825 NE Multnomah, Suite 1800 Portland, Oregon 97232 (503) 813-5000	1/1/07
A. Robert Lasich	President, PacifiCorp Energy	1407 West North Temple Suite 320 Salt Lake City, Utah 84116 (801) 220-2000	8/30/07
Mark C. Moench	Secretary	201 So. Main St. Suite 2400 Salt Lake City, UT 84111 (801) 220-2000	5/31/07
Patrick J. Reiten	President, Pacific Power	825 NE Multnomah, Suite 1900 Portland, Oregon 97232 (503) 813-5000	9/15/06
Douglas K. Stuver	Senior Vice President and Chief Finanial Officer	825 NE Multnomah, Suite 1900 Portland, Oregon 97232 (503) 813-5000	3/1/08
A. Richard Walje	President, Rocky Mountain Power	201 So. Main St. Suite 2400 Salt Lake City, UT 84111 (801) 220-2000	3/21/06
Bruce N. Williams	Vice President Treasurer	825 NE Multnomah Suite 1900 Portland, OR 97232 (503) 813-5000	5/17/06 2/16/00

*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.

PACIFICORP'S DIRECTORS (as of March 26, 2008)			
Name	**Position**	**Address**	**Effective Date***
Gregory E. Abel	Director	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Douglas L. Anderson	Director	302 South 36th Street Omaha, Nebraska 68131 (402) 231-1642	3/21/06
Brent E. Gale	Director	825 NE Multnomah, Suite 2000 Portland, Oregon 97232 (503) 813-5000	3/21/06
Patrick J. Goodman	Director	666 Grand Avenue Des Moines, Iowa 50309 (515) 242-4300	3/21/06
Natalie L. Hocken	Director	825 NE Multnomah, Suite 2000 Portland, Oregon 97232 (503) 813-5000	8/30/07
A. Robert Lasich	Director	1407 West North Temple Suite 320 Salt Lake City, Utah 84116 (801) 220-2000	3/21/06
Mark Moench	Director	201 So. Main St. Suite 2400 Salt Lake City, UT 84111 (801) 220-2000	3/21/06
Patrick J. Reiten	Director	825 NE Multnomah, Suite 2000 Portland, Oregon 97232 (503) 813-5000	9/15/06
A. Richard Walje	Director	201 So. Main St. Suite 2400 Salt Lake City, UT 84111 (801) 220-2000	7/2/01

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ENERGY WEST MINING COMPANY'S OFFICERS (as of May 1, 2008)			
Name	**Position**	**Address**	**Effective Date***
A. Robert Lasich	President	1407 West North Temple Suite 320 Salt Lake City, Utah 84116 (801) 220-2000	5/1/08
Dean S. Brockbank	Vice President and General Counsel and Secretary	1407 West North Temple Suite 320 Salt Lake City, Utah 84116 (801) 220-2000	5/1/08
Jeffery B. Erb	Assistant Secretary	825 NE Multnomah, Suite 1800 Portland, OR 97232 (503) 813-5000	10/1/02
Bruce N. Williams	Treasurer	825 NE Multnomah, Suite 1900 Portland, OR 97232 (503) 813-5000	1/1/92
Tanya S. Sacks	Assistant Treasurer	825 NE Multnomah, Suite 1900 Portland, OR 97232 (503) 813-5000	2/1/01
*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.			

ENERGY WEST MINING COMPANY'S DIRECTORS

(as of May 1, 2008)

Name	Position	Address	Effective Date*
A. Robert Lasich	Director	1407 West North Temple Suite 320 Salt Lake City, Utah 84116 (801) 220-2000	5/1/08

*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.

BERKSHIRE HATHAWAY, INC. OFFICERS (as of March 26, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
Warren E. Buffett	Chairman of the Board Chief Executive Officer	3/21/06	Current
Charles T. Munger	Vice Chairman of the Board of Directors	3/21/06	Current
Marc D. Hamburg	Vice President, Principal Financial Officer	3/21/06	Current

*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.

Summary Listing of Officers and Directors (Past and Present)

ENERGY WEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

BERKSHIRE HATHAWAY, INC. DIRECTORS (as of March 26, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
Warren E. Buffett	Chairman of the Board Chief Executive Officer	3/21/06	Current
Charles T. Munger	Vice Chairman of the Board of Directors	3/21/06	Current
Howard G. Buffett	Director	3/21/06	Current
Susan Decker	Director	5/5/07	Current
William H. Gates, III	Director	3/21/06	Current
David S. Gottesman	Director	3/21/06	Current
Charlotte Guyman	Director	3/21/06	Current
Donald R. Keough	Director	3/21/06	Current
Thomas S. Murphy	Director	3/21/06	Current
Ronald L. Olson	Director	3/21/06	Current
Walter Scott, Jr.	Director	3/21/06	Current
Malcolm G. Chace	Director	3/21/06	5/5/07
Daniel J. Jaksich	Controller	3/21/06	9/26/07

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MIDAMERICAN ENERGY HOLDINGS COMPANY'S OFFICERS (as of April 18, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
Gregory E. Abel	Chief Executive Officer and President and Chief Operating Officer	4/16/08	Current
Douglas L. Anderson	Senior Vice President, General Counsel	3/21/06	Current
Patrick J. Goodman	Senior Vice President and Chief Financial Officer	3/21/06	Current
Brent E. Gale	Senior Vice President , Regulation and Legislation	3/21/06	Current
Maureen E. Sammon	Senior Vice President and Chief Administrative Officer	3/21/06	Current
Cathy S. Woollums	Vice President Senior Vice President, Environmental Services and Chief Environmental Counsel	3/21/06 2/12/07	Current
John "Jack" Diesing, Jr.	Vice President, Corporate Insurance AON Risk Services	3/21/06	Current
Steven R. Evans	Vice President Taxation	3/21/06	Current
Brian K. Hankel	Vice President and Treasurer	3/21/06	Current
Wayne F. Irmiter	Vice President and Controller	3/21/06	Current
Paul J. Leighton	Vice President Corporate Law, Assistant General Counsel & Assistant Corporate Secretary	3/21/06	Current
Jonathan M. Weisgall	Vice President Federal Regulation/IPP	3/21/06	Current
Russell H. White	Vice President, General Services	3/21/06	Current
Mitchell L. Pirnie	Vice President and Chief Litigation Counsel	2/12/07	Current

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MIDAMERICAN ENERGY HOLDINGS COMPANY'S OFFICERS (as of April 18, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
Past Officers			
William J. Fehrman	Senior Vice President, Regulation and Legislation	3/21/06	3/21/06
Keith D. Hartje	Senior Vice President	3/21/06	5/15/07
Mark C. Moench	Senior Vice President	3/21/06	3/21/06
David L. Sokol	Chairman and Chief Executive Officer	3/21/06	4/18/08

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MIDAMERICAN ENERGY HOLDINGS COMPANY'S DIRECTORS (as of September 20, 2007)			
Name	**Position**	**Effective Date***	**Departure Date**
Gregory E. Abel	Director	3/21/06	Current
Warren E. Buffett	Director	3/21/06	Current
Marc D. Hamburg	Director	3/21/06	Current
Walter Scott, Jr.	Director	3/21/06	Current
David L. Sokol	Director	3/21/06	Current

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PPW HOLDINGS LLC OFFICERS (as of December 1, 2006)			
Name	**Position**	**Effective Date***	**Departure Date**
Gregory E. Abel	President	5/23/05	Current
Steven R. Evans	Vice President Taxation	5/18/06	Current
Brian K. Hankel	Vice President and Treasurer	5/23/05	Current
Wayne F. Irmiter	Vice President and Controller	5/18/06	Current
Mitchell F. Ludwin	Vice President and Secretary	5/18/06	Current
James C. Galt	Assistant Treasurer	5/18/06	Current

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PACIFICORP'S OFFICERS (as of May 1, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
Gregory E. Abel	Chairman of Board and Chief Executive Officer	3/21/06	Current
Dean S. Brockbank	Vice President and General Counsel, PacifiCorp Energy	8/30/07	Current
Jeffery B. Erb	Assistant Secretary	3/13/02	Current
Natalie L. Hocken	Vice President and General Counsel, Pacific Power	1/1/07	Current
A. Robert Lasich	President, PacifiCorp Energy	8/30/07	Current
Mark C. Moench	Secretary	5/31/07	Current
Patrick J. Reiten	President, Pacific Power	9/15/06	Current
Douglas K. Stuver	Senior Vice President and Chief Finanial Officer	3/1/08	Current
A. Richard Walje	President, Rocky Mountain Power	3/21/06	Current
Bruce N. Williams	Vice President	5/17/06	Current
Barry G Cunningham	Sr. Vice President	2/11/02	5/23/06
William Fehrman	President, PacifiCorp Energy	3/21/06	8/30/07
Donald A. Furman	Sr. Vice President	7/2/01	6/3/05
Andrew P. Haller	Sr. V.P., General Counsel and Corporate Secretary	06/04/01 12/11/00	12/31/06
Michael G. Jenkins	Assistant Secretary	5/12/99	5/17/2006
Judth Johansen	President and Chief Executive Officer	6/4/01	3/20/06
Robert A. Klein	Sr. Vice President	8/6/01	12/26/05
Douglas A. Kusyk	Assistant Secretary	4/1/05	5/17/06
William D. Landels	Executive Vice President	11/29/99	3/31/04
Jeffery K. Larsen	Vice President	8/22/02	9/10/04
Donald (Doug) Larson	Vice President	7/2/01	5/17/06
Andrew N. MacRitchie	Executive Vice President	6/4/01	3/20/06

*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.

PACIFICORP'S OFFICERS CONTINUED (as of May 1, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
Larry O. Martin	Assistant Secretary	6/4/01	5/14/06
David J. Mendez	Sr. V.P. and Chief Financial Officer	8/22/06	2/29/08
Robert A. Moir	Sr. Vice President	1/11/02	3/31/04
Richard D. Peach	Sr. V.P. and Chief Financial Officer	8/22/06 3/21/2006	11/22/06
Michael J. Pittman	Sr. Vice President	5/19/93	7/7/05
Tanya S. Sacks	Assistant Treasurer	6/4/01	5/17/06
Alexander D. Tait	Assistant Secretary	6/4/01	4/1/04
Stan K. Watters	Sr. Vice President	9/15/06 3/21/06 6/3/03	3/16/07 9/15/06 3/20/06
Ernest E. Wessman	Vice President	3/21/06	5/17/06
Matthew R. Wright	Executive Vice President	1/1/02	3/20/06
*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.			

PACIFICORP'S DIRECTORS (as of March 26, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
Gregory E. Abel	Director	3/21/06	Current
Douglas L. Anderson	Director	3/21/06	Current
Brent E. Gale	Director	3/21/06	Current
Patrick J. Goodman	Director	3/21/06	Current
Natalie L. Hocken	Director	8/30/07	Current
A. Robert Lasich	Director	3/21/06	Current
Mark Moench	Director	3/21/06	Current
Patrick J. Reiten	Director	9/15/06	Current
A. Richard Walje	Director	7/2/01	Current
Barry C. Cunningham	Director	4/02	03/20/2006
Stephen Dunn	Director	11/05	03/20/2006
William J. Fehrman	Director	03/21/06	08/30/2007
Andrew P. Haller	Director	5/03	12/31/2006
Judith A. Johansen	Director	12/00	03/20/2006
Nolan E. Karras	Director	2/93	7/25/07
William D. Landels	Director	11/99	3/31/04
Andrew N. MacRitchie	Director	5/00	3/20/06
David J. Mendez	Director	8/30/07	2/29/08
Richard D. Peach	Director	5/03	11/22/06
Michael J. Pittman	Director	5/00	7/05
Ian M. Russell	Director	1/2/08	1/16/06
Stan K. Watters	Director	3/21/06	3/16/07
Matthew R. Wright	Director	7/01	3/20/06

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ENERGY WEST MINING COMPANY'S OFFICERS (as of May 1, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
A. Robert Lasich	President Vice President, General Counsel and Secretary	5/1/2008 12/1/06	Current 4/30/08
Dean S. Brockbank	Vice President, General Counsel and Secretary	05/01/08	Current
Jeffery B. Erb	Assistant Secretary	10/01/02	Current
Bruce N. Williams	Treasurer	01/01/92	Current
Tanya S. Sacks	Assistant Treasurer	02/01/01	Current
Robert R. Dalley	Secretary	10/00	2/01
Niel L. Getzelman	President	12/01/06	04/30/2008
Andrew P. Haller	Senior Vice President, General Counsel and Secretary	2/01	11/30/2006
Dee W. Jense	President	10/02	11/30/2006
Robert P. King	Vice President	2/01	08/15/2006
Larry O. Martin	Assistant Secretary	2/01	06/15/2006
George C. Schreck	Assistant Secretary	10/00	2/01

*In place on date of MidAmerican Energy Holdings Company acquisition of PacifiCorp effective March 21, 2006, unless noted otherwise.

ENERGY WEST MINING COMPANY'S DIRECTORS (as of May 1, 2008)			
Name	**Position**	**Effective Date***	**Departure Date**
A. Robert Lasich	Director	05/01/08	Current
Niel L. Getzelman	Director	12/01/06	04/30/2008
Terry F. Hudgens	Director	10/00	9/01
Dee W. Jense	Director	10/02	11/30/2006
Judth Johansen	Director	9/01	10/02
Robert P. King	Director	2/01	08/15/2006

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